

PUBLISHED EVERY MONDAY MORNING.

VOL. XXII. NO. 4.

BUFFALO, N. Y., MARCH 24, 1890.

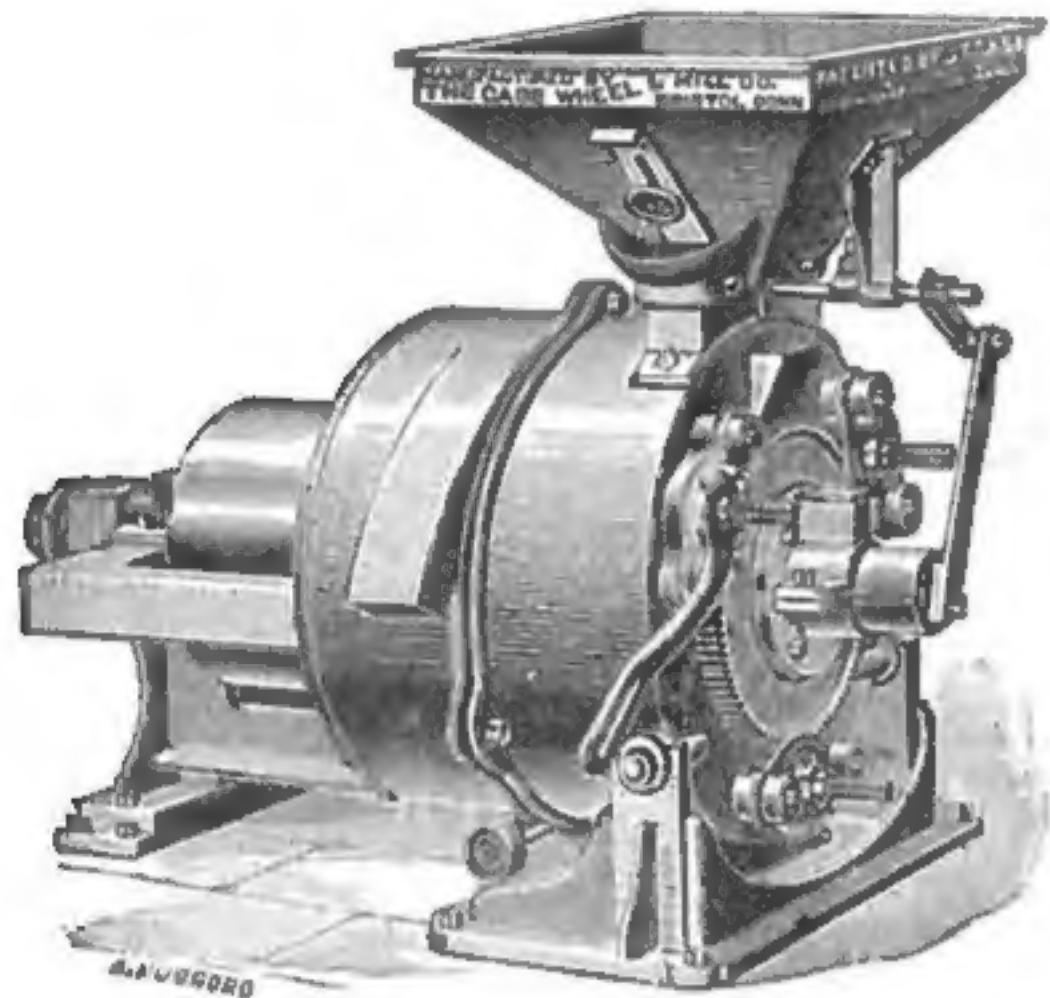
\$1.50 PER YEAR.

VICTORY OVER ALL OTHERS.

SINGLE & DOUBLE VERTICAL GRINDING MILLS.

(J. T. CASE'S PATENT.)

FACTS ARE MIGHTIER THAN ASSERTIONS. READ WHAT THEY SAY:



"Our 20-inch mill made by the Case Wheel & Mill Co. is in every respect satisfactory, easy to handle, and best results obtained of any mill in the country, with same quantity coal and power."—A. S. RUSSELL & CO., Meriden, Conn.

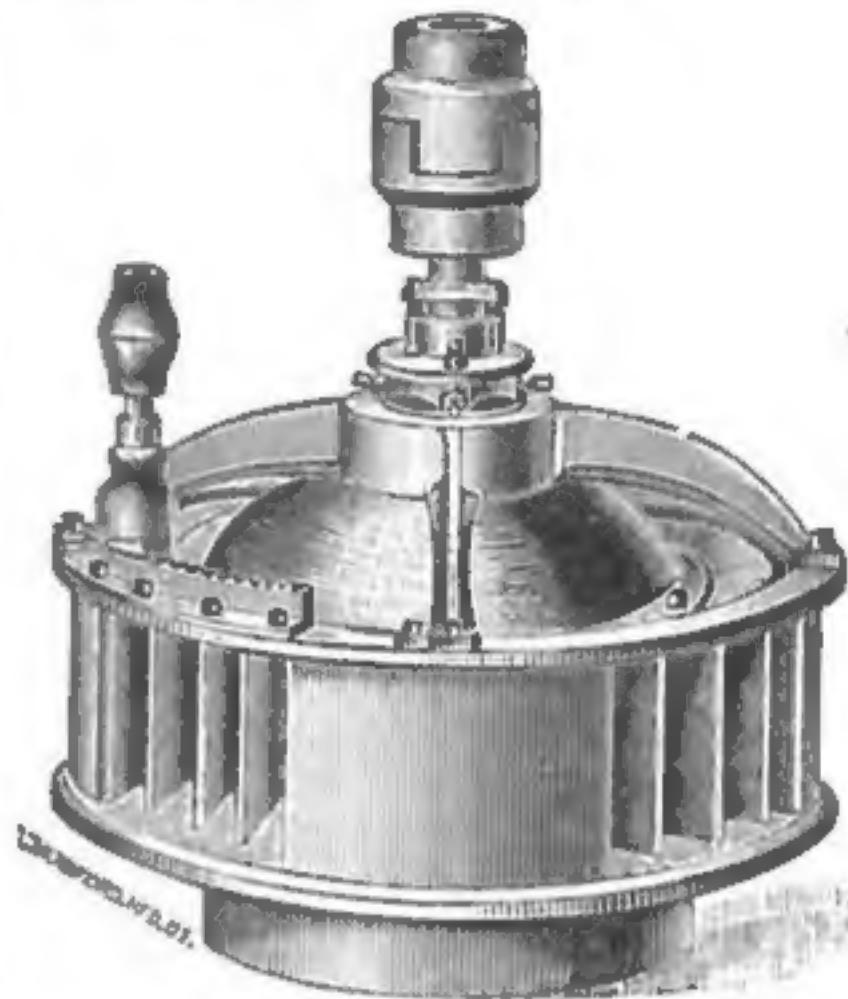
"Superior to any mill in use."—GEO. WESTON, Bristol, Conn.

"The best satisfaction in quantity and quality."—CHILD'S ELEVATOR, Manchester, Ct.

"We take pleasure in recommending it."—GARLAND, LINCOLN & CO., Worcester, Mass.

SEND FOR CATALOGUE—ILLUSTRATED AND DESCRIPTIVE.

The Improved National Turbine Water Wheel

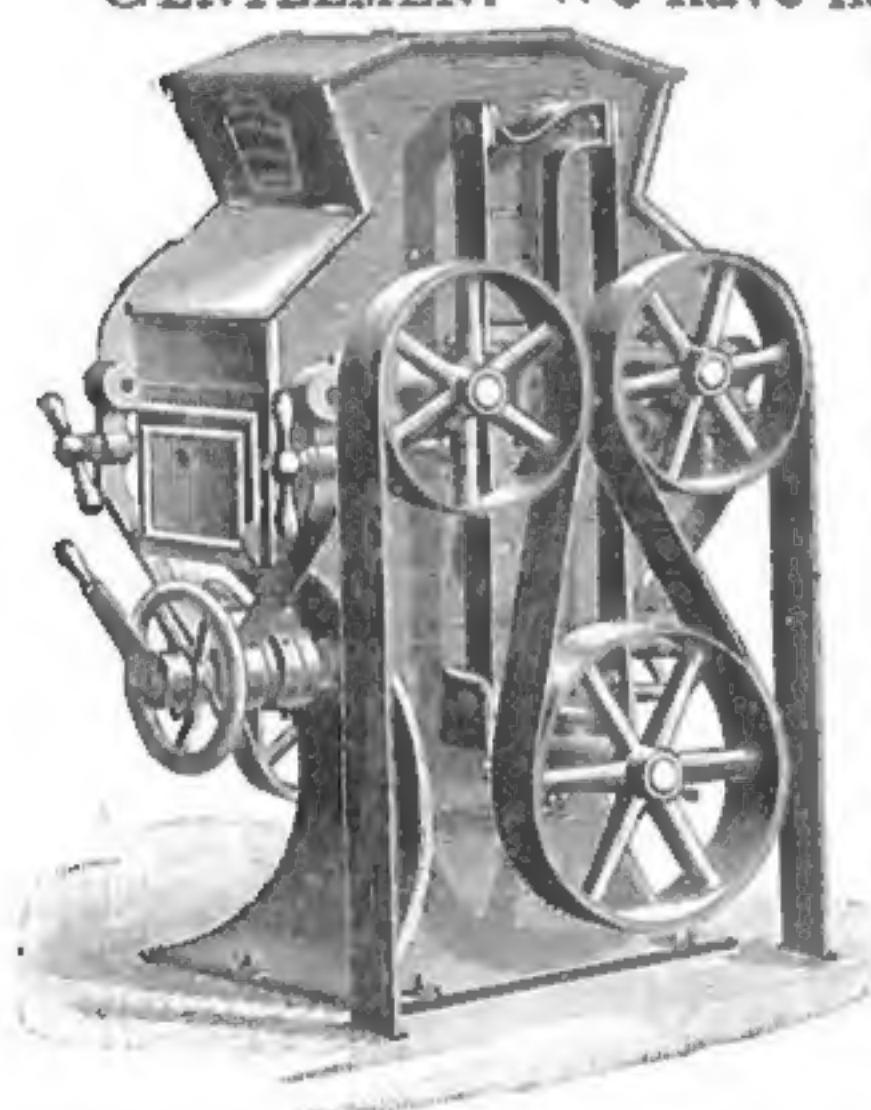


The Best for Economy; The Best for Durability; The Best for Power. ONE THOUSAND FIVE HUNDRED NATIONAL WATER WHEELS IN USE Prove that our Assertions are Supported by the Leading Manufacturers in the Country. Send for illustrated catalogue and prices to the manufacturers.

The Case Wheel & Mill Co., Bristol, Conn.

THE J. B. ALLFREE COMPANY, INDIANAPOLIS, IND.

GENTLEMEN: We have had your mill in operation since November, 1889. It is an 80-barrel mill and put up in splendid style and finish. The *workmanship is perfect*, and in every respect, and all *our machinery runs with the greatest of ease*. Our engine is an "Allfree Automatic," and *it is a "daisy."* It *plays* all day long and takes *but little fuel*. We *would sooner have it than a Corliss*, and think it is *quite as economical*. Our entire mill outfit is first-class, and is made by *The J. B. Allfree Company, of Indianapolis, Ind.* The *shaker scalper* is a *success*, and *does better work than a reel scalper*, and runs easily with a 3-inch belt.



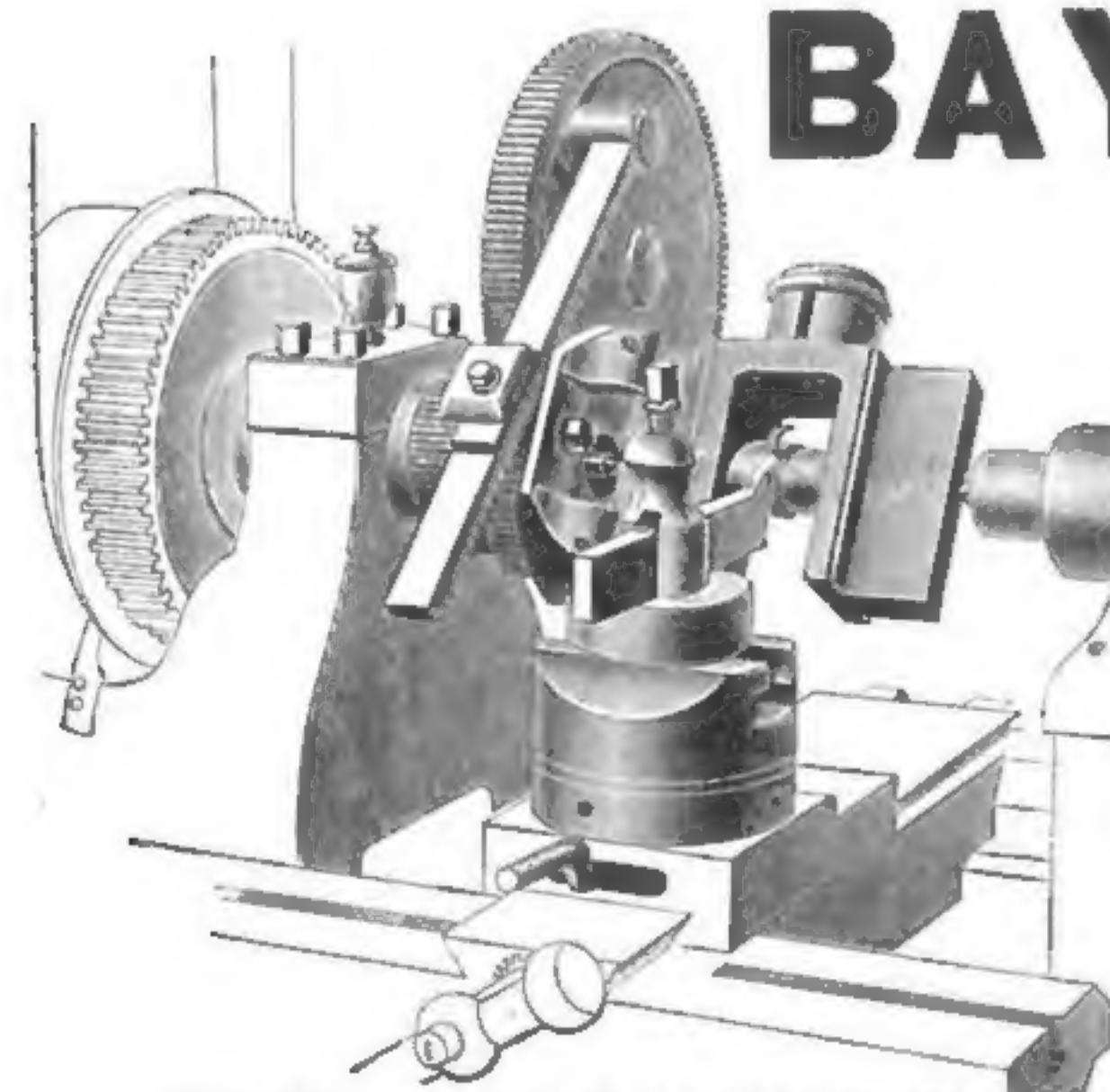
We wish all intending to build mills could pay us a visit, so that we could show them all the good points of our mill—for to see is to be convinced of its superiority. Our mill does good work, and we can say that we have had *no choke-up* and *no belt to change since we started*. We can *fully recommend the J. B. Allfree machinery* in every respect to millers wishing to build or remodel their mills.

Yours truly,

NEW SHARON MILL CO.,
R. D. HIGH, Manager.

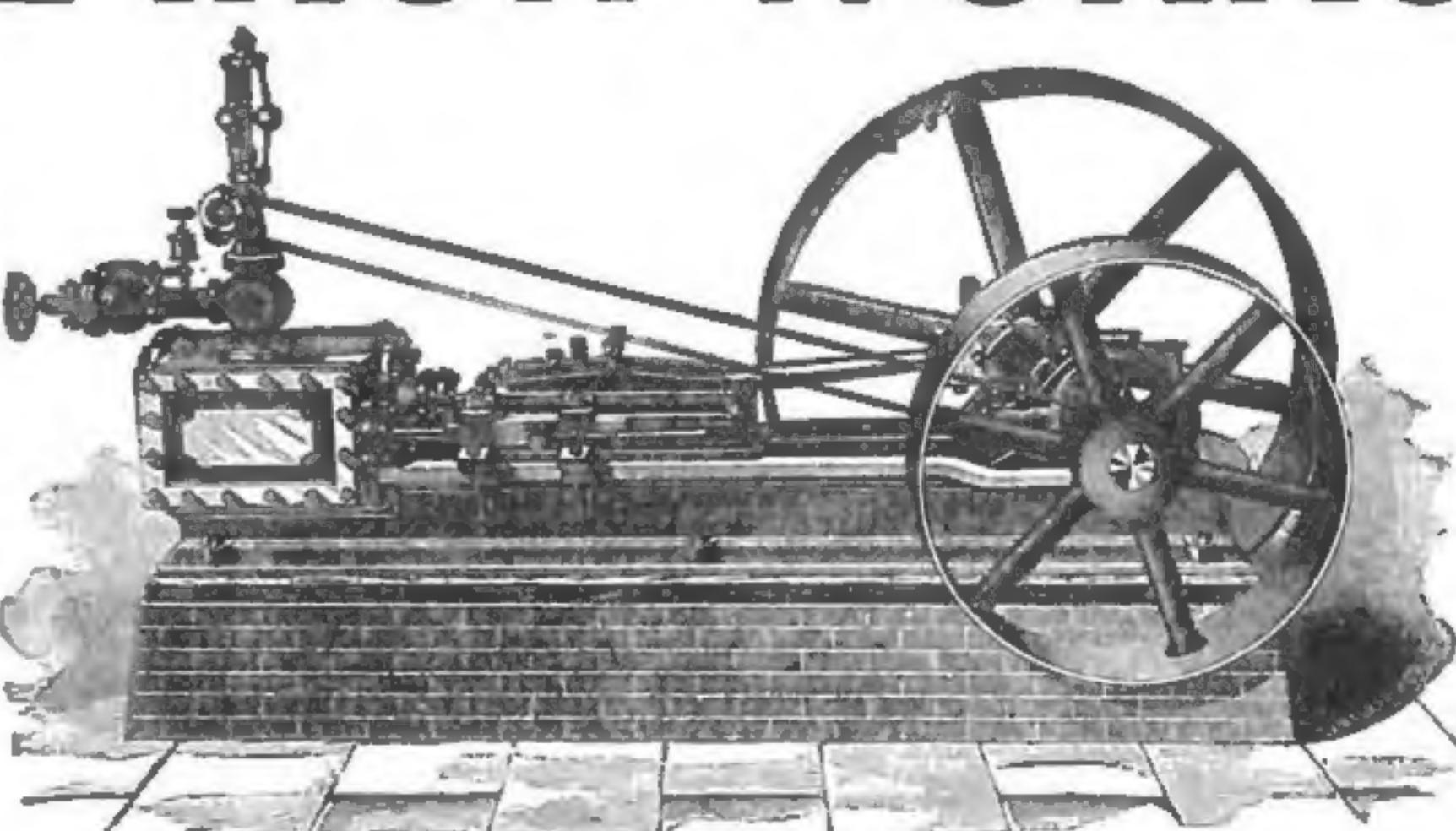
BAY STATE IRON WORKS

Manufacturers of
Engines, Boilers,
AND
HOISTING MACHINES.



PATENT CROSS-HEAD MACHINE.

Also the Patent Cross-Head Machine and Acme Cube Pipe Tongs. We make either Center or Side Crank Engines, on same bed. Make engines from 5 to 250 Horse-Power. Have over 8,500 Engines and Boilers and over 1,000 Hoisting Machines in use, and all giving good satisfaction. Send for Catalogues and Prices.



IMPROVED DETACHABLE CENTER-CRANK ENGINE.

Noble & Hall, Box 462, Erie, Pa.

OFFICE OF

CASE MANUFACTURING COMP'Y

COLUMBUS, OHIO.

The Case Roller Mills. Over 14,000 Pairs in Use.

PLEASE READ OUR DESCRIPTION OF THEM, EVERY STATEMENT OF WHICH IS ABSOLUTELY TRUE.

PLEASE READ WHAT MILL OWNERS SAY ABOUT THEM.



The accompanying cut is a correct illustration of our latest improved Four Roller Mill. For fine work, great durability, simplicity, and general excellence, they stand "head and shoulders" above all others.

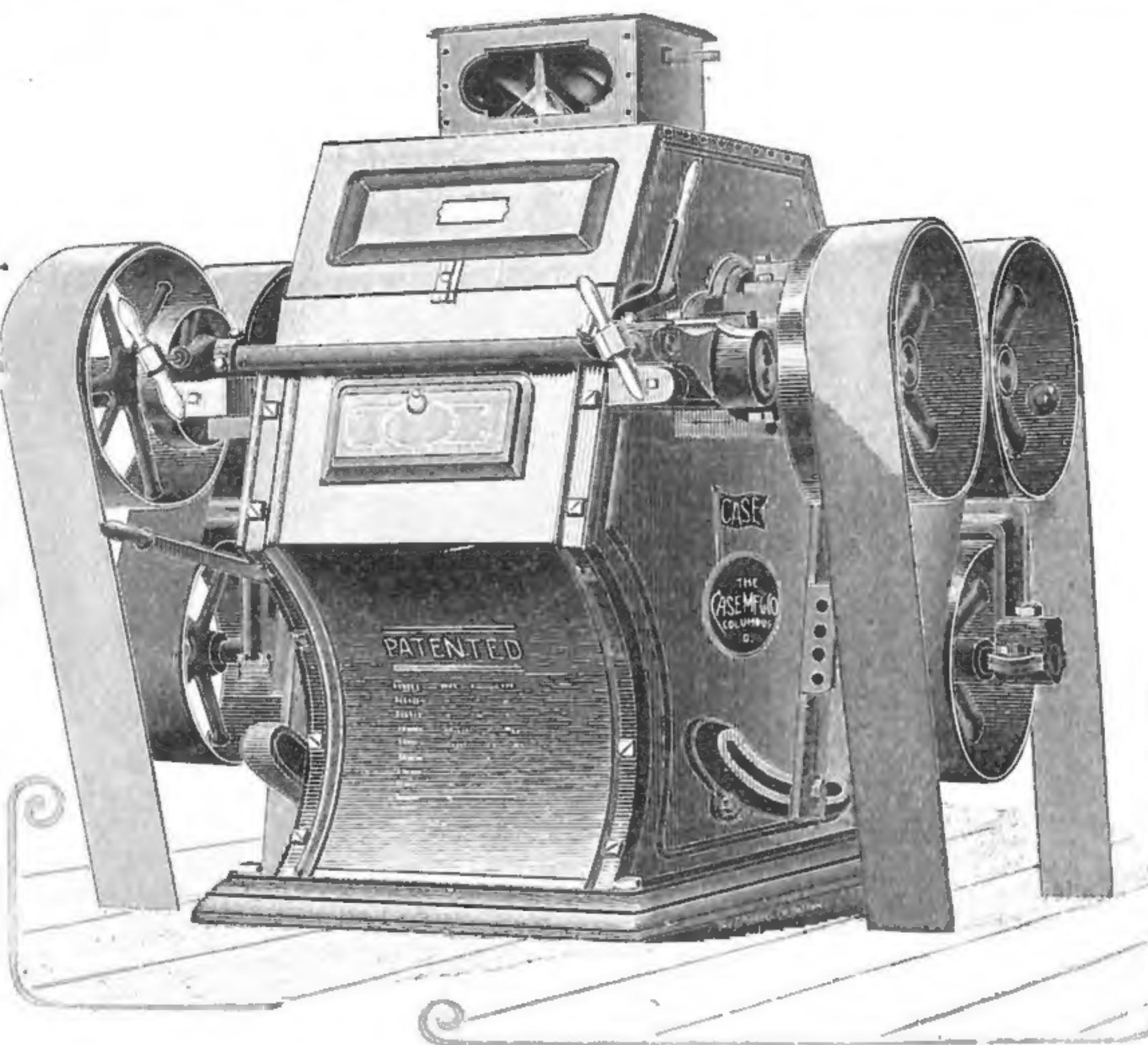
The frame is of iron with a heavy iron base.

The wood-work in top is of select cherry and black walnut, carefully shellacked and varnished.

The handles of adjusting screws and levers are finely nickel plated.

The joints are tight and dustless.

The adjustments easy, simple and perfect.



The roll bearings are wide and finely babbitted.

The belt drive is positive—no little short belts to slip.

The door for examining stock is a great convenience.

The arrangement for leveling rolls, simple and accurate.

The rolls can be thrown apart their entire length by one movement of the lever, and brought back again to original position, requiring no re-setting or experimenting.

Each machine is provided with our AUTOMATIC VIBRATING FEED, which requires no attention, and never fails to spread the feed the entire length of the rolls.



Please Read These Testimonials.

LITCHFIELD MILLING CO., MANUFACTURERS OF FLOUR. }
LITCHFIELD, ILL., Sept. 14, 1889.

Case Manufacturing Co., Columbus, Ohio.

GENTLEMEN: We are in receipt of your favor of the 11th inst., and in reply would say we have twenty CASE AUTOMATIC FEEDS on our Dawson and Allis Rolls, and we are greatly pleased with them. We have tested the Feeds thoroughly on different materials, and find they work as well on bran and germ and other soft materials, as they do on middlings. We have derived great benefit from the use of them, and can cheerfully recommend them to the milling fraternity. Yours truly,

J. C. EDWARDS, General Manager.

OFFICE OF A. J. MILLER, PROPRIETOR WHITE ROSE MILLS. }
DEALER IN FLOUR, GRAIN AND MILL FEED. }
METAMORA, IND., Nov. 19, 1889.

Case Manufacturing Co., Columbus, Ohio.

GENTLEMEN: Your Feed arrived O. K., and placed it in working order in a very short time. You have furnished me a daisy Feed. After regulating your Feed, it needs no more attention. It pays for itself in one week over the "Roller Feed" in cleaning up the

stock, and also insuring the superiority at same time. I forward you the amount of bill.

Yours truly, A. J. MILLER.

TREZEVANT, TENN., Feb. 27, 1889.

The Case Manufacturing Co.

GENTLEMEN: We have five double stands of Rolls with Roller Feeds on all of them. A short time ago one of your agents induced us to try one of your Automatic Shaker Feeds. We find that it works much better than the Roll Feed, distributing the material the whole length of the Roll. We heartily recommend your feeds to any one wishing to put in new machinery.

Respectfully yours, FUQUA, HARRIS & CO.

W. C. MANSEFIELD & CO., MERCHANT MILLERS. }
CLEVELAND, TENN., Aug. 29, 1889.

Case Mfg. Co., Columbus, O.

GENTLEMEN: If we were to build a hundred mills, we would not permit any other than the "CASE ROLL" to enter them. They are the best roll on earth. Yours truly,

W. C. MANSEFIELD & CO.



CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY MORNING.

VOL. XXII. No. 4.

BUFFALO, N. Y., MARCH 24, 1890.

\$1.50 PER YEAR

REFERRING to some of the long-system words from the German verbal mills recently reprinted in THE MILLING WORLD, our old friend, Jonathan Mills, of flour-dresser fame, sends us the following word, which was a well-known conglomeration in his boyhood days: "Honorificabilitudinari-anatalibuskiss." This seems to fall a half-dozen breaks below the German long-break reduction monstrosities quoted.

IT will be nothing short of remarkable if time does not show that the "cold snap" in early March really did serious damage to the advanced winter wheat. Such damage is not always measurable immediately after the freezing. There is a strong probability that, when the growing season sets in, winter wheat may appear very tired in very many very important wheat regions. We have letters, from correspondents in the winter-wheat belt, which are very conflicting, but which indicate a strong belief that the damage will prove greater than the most pessimistic now imagine it to be.

WE have received a copy of "Cawker's American Flour Mill and Elevator Directory" for 1890 and 1891. The volume contains the addresses of 15,998 millers, millwrights, elevator owners, flour and grain brokers, bakers and others connected with the flour and grain trade in the United States, together with 1,147 addresses in Canada, making a total of 17,145 for the two countries. The directory gives the latest information concerning American wheat, corn, oat and buckwheat mills, with their power, grinding equipment and capacity. The book contains over 150 pages, and it represents a vast amount of labor and the expenditure of much money in collecting the valuable data. Cawker's Directory sells for \$10. Inquiries and orders should be addressed to Mr. E. Harrison Cawker, Milwaukee, Wisconsin.

THAT pretentious New York journal, "Bradstreet's," is getting a good deal of ridicule for its pretentious "estimates" of the stocks of wheat. Its figures seem to show that its "estimates" are simple guess-work, care being taken in each case to keep within reach of the government figures. The Chicago "Daily Trade Bulletin" says: "If 'Bradstreet's' has carefully collected the quantity of wheat in farmers' hands, why does that publication not give in detail the quantities in Dakota, Minnesota and Wisconsin, when presenting the Government report in detail for comparison in tabulated form?" The question suggests the answer, "Bradstreet's" has no details to give. It guesses in the lump. Its estimates are as ridiculous as the prophecies of the weather-prophets, being founded on the same principles of blind guess-work.

THE amusing Minneapolis "Yahoo" has never been renowned for truthfulness. No one at all familiar with its incessant mendacity will be surprised to learn that it announces, in a recent self-vaunting advertisement, that its "subscription price is three times that of any other milling journal in the United States." The falsehood in that announcement is patent. The "Yahoo's" price is \$3 a year, including its expensive special issue, which it sells at 50 cents

a number. That means that the real price of the "Yahoo" is only \$2.50 a year. All the monthly milling journals are \$1 a year, so that the "Yahoo's" price is not three times their price. The price of THE MILLING WORLD is \$1.50 a year, so that the falsehood is even more senseless when applied to this journal than when applied to the monthly journals. The boasting "Yahoo" is an exporters', importers' and grain gamblers' journal. It is practically unknown among millers, and its falsehoods can not deceive the millers who look for something besides mere export and gambling reports in a journal alleged to be devoted to the men who manufacture flour.

THOSE of our readers who own the "Encyclopaedia Britannica" will be interested in the "American Supplement" to that great work, which is advertised in another column. The plan of the "Supplement" is as follows: 1. The employment of eminent American expert authorities to examine each subject treated in the "Britannica" by English writers. 2. To supplement every article of the "Britannica" requiring it with information important to American subscribers. 3. To treat subjects of recent development (not treated in the "Britannica") where invention, discovery or scientific progress made such treatment desirable. 4. To treat living men of eminence, such as Gladstone, Bismarck, Stanley, Edison, Blaine, etc., because the biography of no living men is admitted in the "Britannica." We advise every owner of the English work to purchase the "American Supplement." For terms address the publishers, Messrs. Hubbard Bros., 723 Chestnut street, Philadelphia, Pa., or the western New York agent, Mr. J. H. Matteson, 16 East Eagle street, Buffalo, N. Y. The "Britannica" is "Too British" for use in America, but with the "American Supplement" the American owner will be well equipped.

THE new tariff bill adopted by the Ways and Means Committee, to be presented to Congress for action, makes many changes in the duties on imported articles. The agricultural schedule of the bill shows the following rates on produce imported: Horses and mules are dutiable at \$30 per head, but when they exceed \$150 in value they are to pay 30 per cent ad valorem, as against the existing rate of 20 per cent. Grown cattle pay \$10 per head. Hogs \$1.50, and sheep \$1.50. Barley pays 30 cents per bushel; corn 10 cents; oats 10 cents; rye 10 cents; wheat 10 cents, and wheat-flour 20 per cent. The duty on butter is 6 cents per pound; cheese 6 cents, and milk 5 cents. The existing duty on milk is 20 per cent. and on cheese and butter 4 cents per pound. Cider is to pay 5 cents per gallon and cabbages 3 cents each. Eggs are charged 5 cents per dozen, and the yolks brought in separately 25 per cent. Hay is increased from \$2 to \$4 per ton. A duty is imposed on hides, which are now free, amounting to 1½ cents a pound, with a drawback allowed on leather which is exported. Hops are advanced from 8 to 15 cents per pound. Onions are charged 40 cents per bushel. Vegetables in their natural state are increased from 10 to 25 per cent., and when prepared or preserved, from 30 to 45 per cent.

The DAWSON ROLL WORKS CO. FOUNDERS & MACHINISTS,

—MANUFACTURERS OF THE—

Dawson Roller Mills

—AND FURNISHERS OF—

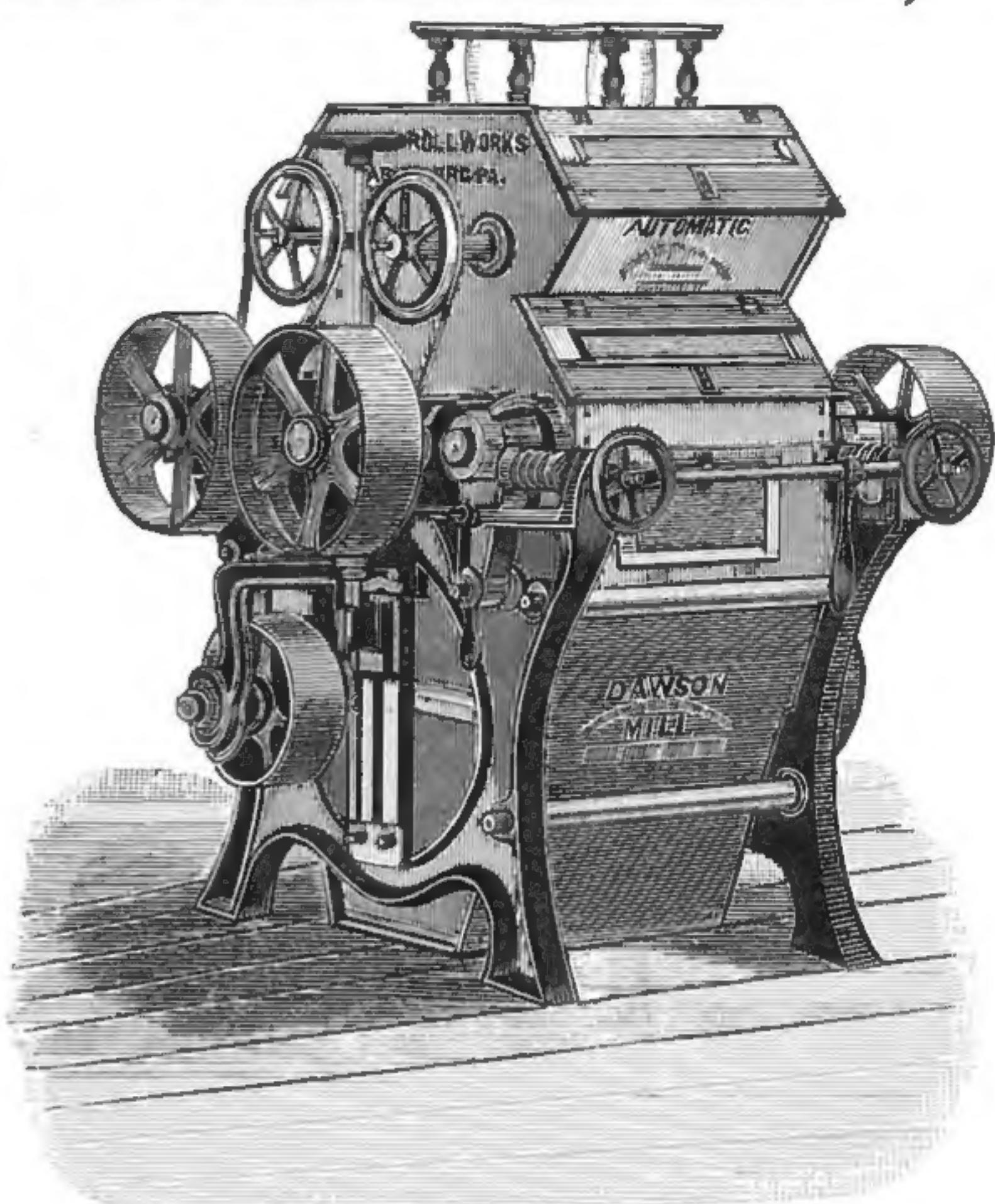
CHILLED IRON ROLLS

WITH DAWSON PATENT CORRUGATION.

ALL STYLES OF FLOUR MILL ROLLS RE-GROUND AND
RE-CORRUGATED WITH ANY FORM OF CORRUGATION.

—
We have had large and extended experience in grinding and corrugating chilled rolls for milling, and have one of the largest and most improved plants in the country for this work, which enables us to meet the most exacting requirements of the trade promptly.

ORDERS AND CORRESPONDENCE SOLICITED.



DAWSON ROLL WORKS CO.

South and Short Streets,

HARRISBURG, PA.

The Cowles "Reliable" Sectional Wood Pulley

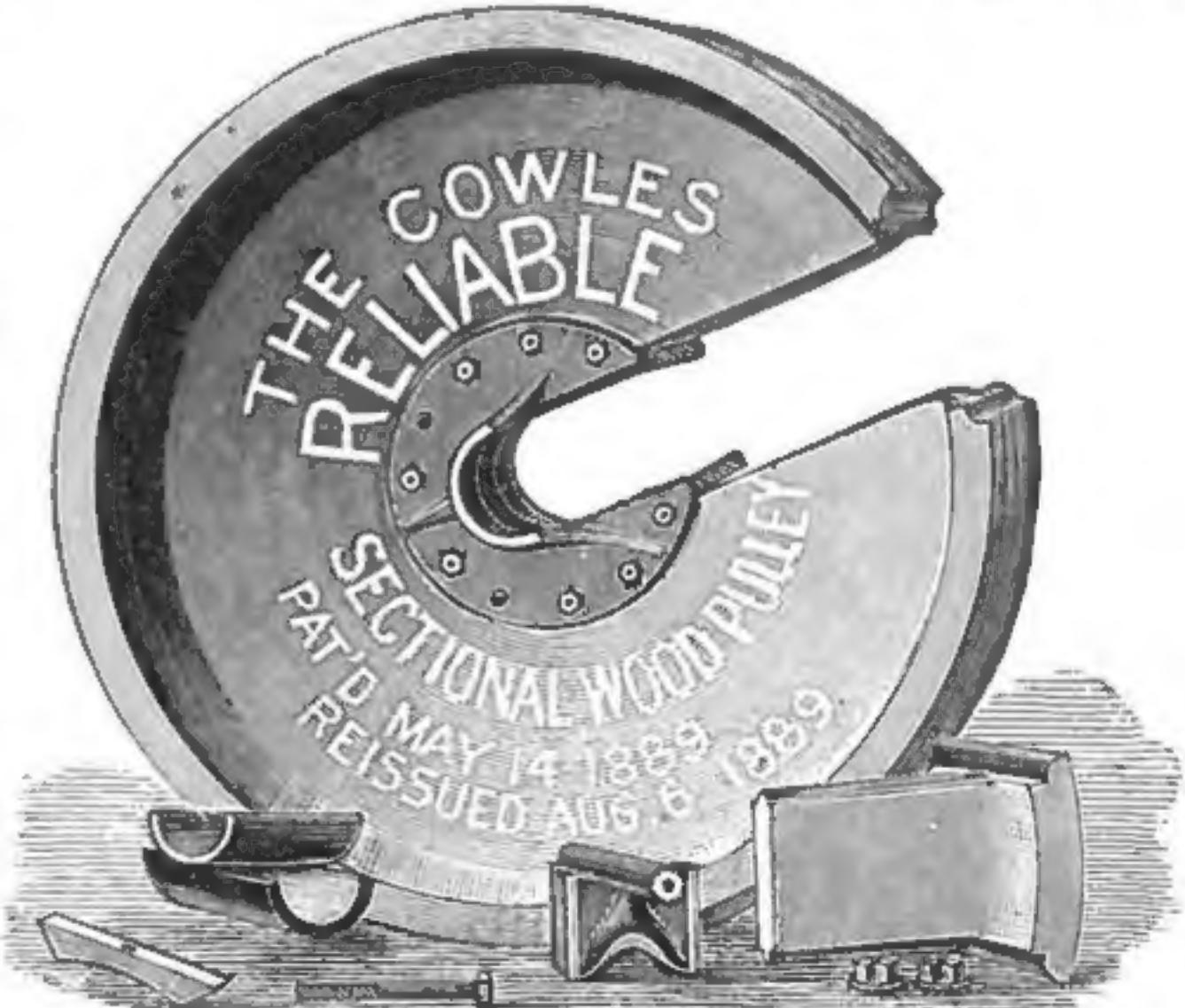
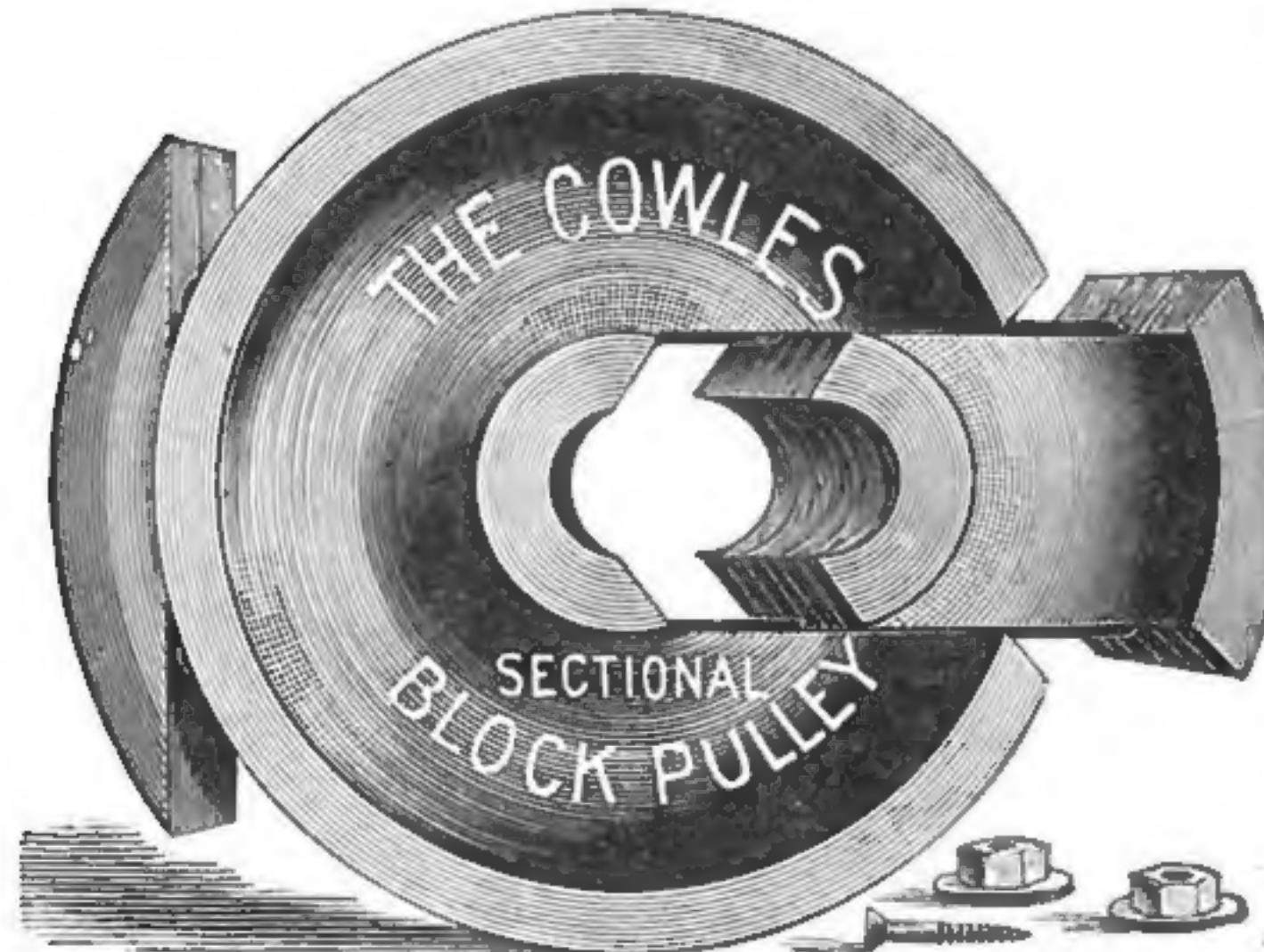


Web made of several layers glued together with grain crossing, and faced up on both sides. Iron flanges securely bolted to web. Rim put on after web has been trued up. Web and rim turned on inside and face, making perfect running pulley. Rim supported entire circumference. Positive self-gripping device for securing pulley to shafting, which is self-centering, and can not slip with wear.

A wooden rim pulley transmits from 30 to 50 per cent. more power with same belt than an iron one.

Two-thirds lighter than iron, bearings will wear longer and the expense for lubricant will be less.

Having solid web, there is no air resistance. The "Reliable" can be placed on shaft or position changed in one-fourth the time required with any other pulley.



EDWARD GERMAIN, SOLE
MANUFACTURER

SAGINAW, MICH., U.S.A.

MILLING WORLD

AND
CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY. OFFICES: { Corner Pearl and Seneca Streets,
Over Bank of Attica.
McFAUL & NOLAN, - - - PROPRIETORS.
THOMAS MC FAUL. JAMES NOLAN.

SUBSCRIPTION.

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; remit by Postal Order, Registered Letter, or New York Exchange. Currency in unregistered letter at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

ADVERTISING.

Rates for ordinary advertising made known on application. Advertisements of Mills for Sale or to Rent; Partners, Help or Situation Wanted, or of a similar character One cent per word each insertion, or where four consecutive insertions are ordered at once, the charge will be Three cents per word. No advertisement taken for less than 25 cents. Cash must accompany all orders for advertisements of this class.

Orders for new advertisements should reach this office on Friday morning to insure immediate insertion. Changes for current advertisements should be sent so as to reach this office on Saturday morning.

EDITOR'S ANNOUNCEMENTS.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with a millfurnishing house and aims to represent the trade without prejudice, fear or favor.

Address all communications

THE MILLING WORLD, BUFFALO, N. Y.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1 cent for each additional word. Cash with order. Four consecutive insertions will be given for the price of three.

SITUATION WANTED.

Head miller with over 20 years' experience want to make a change this spring. Address, A. MILLER, 67 Weaver Alley Buffalo, N. Y.

WANTED.

A situation to run a 50 to 100-barrel roller mill, Pennsylvania, New York, Ohio and Michigan preferred. Address MILLER, Box 75, Union City, Erie Co., Pa.

WANTED.

A situation in some flouring or grist mill, by a man who has had good experience with the buhr system. Can furnish best of references. Address, THOMAS H. NICHOLAS, DeRuyter, N. Y.

SITUATION WANTED.

A situation wanted by a stone and roller miller, 14 years' experience, to take charge of custom mill, or work as second in first-class roller mill. Address WILLIAM H. EATON, North Ridgeway, Orleans County, N. Y.

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1 cent per word, for one insertion, or 3 cents per word for four insertions. No order taken for less than 25 cents for one insertion, or 50 cents for four insertions. Cash must accompany the order. When replies are ordered sent care of this office 10 cents must be added to pay postage.

WANTED.

The address of Mr. Buhr Miller who was formerly a citizen of Prosperity removed to Adversity, and when last heard from was in Despondency looking for a job. By the will of his uncle Oliver he becomes heir to a modest fortune to obtain which he should address the FLENNIKEN TURBINE COMPANY, Dubuque, Iowa. Administrator. (Exchanges please copy.)

MILL MACHINERY FOR SALE.

One No. 0 Standard Combined Separator, Smutter and Brush Machine; new, best make.
One 20-Inch Under-Runner Portable Mill, French Buhr Stone, capacity 10 to 12 bushels per hour; new, best make.
One 14-Inch Vertical Feed Mill; best make, new, a bargain.
One No. 6 Dustless Separator; new, a bargain.
One No. 1 Full Rigged Combined Dustless Separator; new, a bargain.
Four Corn Cob Crushers, right or left hand, driven from above or below, best make; capacity 40 to 60 bushels per hour.
Three No. 1 Corn Shellers, capacity 200 to 300 bushels per hour; new.
One No. 2 Purifier. New. Best make. A bargain.
One 20-Inch Portable Mill.
One 18-Inch Double Gear Portable Mill.
For particulars address, FRANK SMITH, care of THE MILLING WORLD, Buffalo, N. Y.

FOR RENT.

Clinton Mills, at Black Rock, Buffalo, for rent on reasonable terms, recently repaired and put in good order. Apply to CHAS. DANIELS, over 811 Main Street, Buffalo, N. Y.

FOR SALE.

Flour and feed mill, with water power and three run of stones, for sale cheap; also dwelling house and garden. Situated half a mile from depot on New York and New England R. R. For particulars, address, MRS. M. E. DOUGHTY, Green Haven, Dutchess County, New York.

2427

FOR SALE.

One-Hundred Barrel Roller Mill, in one of the best winter wheat sections of the country. Wheat brought to the door in wagons, and flour can be shipped in any direction by six railroads and river. Splendid home market, here and in Louisville.

Also a Sixty-Barrel Custom Mill, roller, running full time on custom, and can hardly keep up. Paying well now, but satisfactory reason for selling. Either or both will be sold cheap. J. M. HAINS, New Albany, Ind.

263

It is definitely announced that in some of the drouth-smitten counties of North Dakota there is destitution among the farmers. The extent of the suffering is considerable, and measures of relief are being adopted. No one will be allowed to starve, and a favorable season this year will set the Dakotas on their legs once more.

MANITOBA farmers are now threatened by serious troubles concerning land titles. If any one thing is needed to round out the disasters of the past two crop seasons in Manitoba, it is a land-title trouble. With that difficulty added to all the others, Manitoba farmers may well exclaim that Manitoba is a magnificent country to emigrate from.

PARTICULAR attention is called to the advertisement of the Case Manufacturing Company, Columbus, Ohio, which is changed in this issue. The magnificent roller-mill shown in the advertisement is one of the foremost flouring-machines of the day, and the testimonials presented show what its users think of it. Attention is called to the solidity of the wood and iron work, the fineness of the finish, the tightness of the joints, the easy, simple and perfect adjustments, the positive belt drive, the door for examining stock, the simple and accurate arrangement for leveling the rolls, and the automatic vibrating feed. Purchasers will find the Case roller-mills perfectly reliable and satisfactory.

CERTAIN eastern manufacturers are signing a petition to Congress for free coke, coal and iron ore. That is all right. This is a free land. Petitions are in order. But our easterners should not forget that free trade in coke, iron and other so-called "raw materials" implies free trade in manufactured wares. The consumers will not rest contented with half-way free trade. If it is well for the eastern manufacturers to have "free manufactured raw materials," like coke and pig iron, it is still better for the consumers to have free manufactured wares in toto. Those easterners are preparing a knife to slit their own purses and a hammer to smash their own business. They would better let well enough alone.

BREADSTUFF exports during February showed increased quantities in wheat and flour, with decreased values, compared with last year. The wheat grain exports for the month were 4,800,450 bushels, worth \$3,865,325, against 1,585,629 bushels, worth \$1,392,645 in February last year. For the 8 months ending February 28 this year the total was 37,071,445 bushels, worth \$30,607,234, against 33,705,970 bushels, worth \$30,783,551, an increase of 3,365,475 bushels and a decrease of \$176,327. The February wheat flour exports were 1,018,461 barrels, worth \$4,703,946, against 666,778 barrels, worth \$3,343,151, last year. The 8-month exports were 7,845,473 barrels, worth \$37,025,197, against 6,227,466 barrels, worth \$30,190,536, a year ago. The February exports of barley footed \$60,034, against \$31,365; corn 13,421,111 bushels, worth \$5,473,979, against 7,570,384 bushels, worth \$3,424,291; corn-meal \$52,749, against \$52,663; oats \$410,638, against \$13,279; oatmeal \$26,500, against \$35,636; rye \$46,437, against \$735. The total value of the breadstuffs exported in February is \$14,639,608, against \$8,293,765 last year. For January and February, this year, the total is \$26,197,228, against \$19,126,989 last year. For the 8 months ending with February, this year, the total is \$94,847,578, against \$82,108,465 for the corresponding period a year ago.

FOR SALE CHEAP.

One 36-In. Iron Frame Portable Mill, French Burr Stone. Used about 2 months.

One 20-In. Vertical Mill, French Burr Stone. Used about 30 days.

Three Pair 42-In. Old Stock Feed Stones.

FOR PARTICULARS ADDRESS,

SAMUEL CAREY, 17 BROADWAY, NEW YORK.

TRENDING TOWARDS PATERNALISM.

A. B. SALOM.

AMONG the conspicuous signs of the time is a trend towards paternalism. Prominent agitators propose that the general government shall take absolute charge of all important interests and manipulate them for the people, relegating private enterprise to obscurity and employing national resources to take its place. One school of so-called thinkers ask the government to begin its paternal reign by taking possession of the land and acting as landlord to those who desire to use it. Another school ask the government to take control of the coal and mineral deposits, the forests, the petroleum and other natural resources, and to regulate production, fix and maintain prices, dictate quality and in general do an important business that at present employs billions of capital. Another school ask the government to take the telegraphs, the railroads, the telephones and various other great interests under control. There is hardly an important industry or interest in the land which the various schools of agitators have not asked the government to take and to manage.

Everywhere and constantly is heard the argument that the state and national governments could so manipulate the material interests of the country that every citizen would receive his just share of the good to be derived from those interests. So general is this sentiment, one is puzzled to account for it. Certainly it is singular that men, many of whom were born in paternalistic lands, and many others of whom are sons of men so born, should, in this land of non-paternal or non-centralized governmental powers, come to the conclusion that the government can do more for them than they can do for themselves, and that they should ask the government of this country to assume and to exercise the very powers which they condemned and resented in assumption and exercise by their own governments. It seems to be a tacit agreement that popular institutions, in so far as they relate to material things, are a failure. It seems to imply that the men, the people, who are, or who make, the government, have lost sight of their individual relations to the government which is the creature of their own creation.

Who are the men asking for the assumption of practically limitless paternal powers by the government? 1. The professional agitators, who have caught the attention of the masses and who have misled their followers into accepting the incredible as credible, the impossible as possible, and the absurd as wholly reasonable. 2. The crazy political economists, who are either honestly unable or dishonestly unwilling to see the force of facts that do not square with their theories. 3. Honest and ignorant men, who have placed their thinking in the possession of the agitators and economists, and who make the demand for paternalism, not as a result of their own reasoning, but simply because they feel that they must echo the doctrines of those to whom they have surrendered their own judgment and reasoning powers. These three classes, comprising hundreds of thousands, are the men who are praying for a paternal government in the United States, for a government whose powers would far exceed those of even the Czar of all the Russias.

Recently the paternal idea has gained new converts. In these new cases it is not men who are poor and forced to work. Strange as it may seem, they are men of wealth, of business experience, engaged in great enterprises. These men have not come to the paternal idea through any vague theories or through blindly following professional agitators. They have been driven to the conclusion that the best thing to be done is for the government to take possession of the interests which state and national legislation has, by unjustifiable meddling and unrighteous restrictions, practically ruined. One of these men, President Blackstone of the Chicago and Alton Railroad, in his last annual statement, details the desperate straits to which adverse legislation has forced the railroads, and says in brief:

"The remarkable course which the government has pursued in causing competing railroads to be constructed and by imposing what appears to us to be, in some cases, unnecessary restrictions upon railway managers, can not be too

often referred to while it remains unchanged. It is idle to say that the state governments are not responsible for the construction of the many railroads. They, and they only, have had absolute power to prevent the building of railroads. No railroad ever has been or can be constructed in the United States except by state or federal authority. It is no answer to say that the object in multiplying railroads has been to regulate rates or to reduce them within reasonable limits. Reasonable rates can not be secured by multiplying railroads without limit. As well might a man at the head of a large family attempt to regulate his servants, of whom he has already a sufficient number, by adding as many as his house will hold, and then attempt to obtain good service from them by reducing their wages and keeping them in a half-starved condition. It is said that we should not complain unless prepared to suggest a remedy. We will therefore suggest the ownership of railroads by the national government and the organization of a corps of railroad operators, who shall remain in the service during good behavior and be in no greater degree under the influence of politicians or political parties than the army militant."

This explicit declaration is coupled with a detailed scheme for the acquisition of the railroads by the government and for the payment for them by the national owner. Every crazy socialist, anarchist, single-taxist, nihilist and fanatic in the land ought to hail this declaration with joy. The conscienceless "railroad barons" have had their wings clipped. The state and federal legislatures have bankrupted them. Laws have been made to prevent them from making a profit on their invested capital. They are losing money. The lines no longer pay. They now step to the front and ask the hostile state and nation to take from them their bankrupted properties and pay them what they are worth! Surely every crazy agitator in every grogery in the land should hail the accession of the humbled "robber railroad barons" to the ranks of those who are asking the government to do what it never was intended to do, and what it never can do successfully. The sentiments of Mr. Blackstone are shared by other railroad men, who have seen their properties virtually confiscated by the inequitable laws framed to harm them. Doubtless a canvass of the railroad managers, owners, stockholders and directors of the country would reveal the existence of a strong opinion that open confiscation would be no greater hardship than the present conditions impose upon this important interest.

The outcome of it all? Prophecy is rash. Human nature can not be relied upon sufficiently to justify a prediction. Possibly the fever of hostility to vested interests of great magnitude has passed its climax, although it must be confessed that the signs do not indicate it. New and more intolerable restrictions may be imposed. At all events, a reaction is inevitable. Already the farmers of the west have discovered that in wounding and crippling the railroads they have crippled themselves almost hopelessly. They may desist from further wounding, merely to avoid suicide. Paternalism forced on business interests will result in disaster in this country, prompt and enormous disaster. Our systems of society, finance, commerce, politics, are all against the successful practice of paternalism. The mere magnitude of the industries of the United States would make them unmanageable by a government whose personnel is yearly, monthly and daily changing. Of all the forms of government on earth, the republican form is the one least fitted to carry on the work outlined by the fanatics who consider the government a beast-of-burden endowed with the omniscience, the omnipotence and the benevolence of the deity, and able to perform, as a whole, what the parts confess their inability to perform.

CONTEMPORARY COMMENT.

The long and short haul clause works injustice to no one, not even the Nebraska farmers; but it does prevent their obtaining the low rates charged before the law was enforced. —Chicago "American Miller."

There is a race among produce and crop statisticians to reduce each his estimates to the finest basis of theoretical and scientific accuracy. In order to reach such results it is necessary to prepare a foundation for an astonishing display of tabulated statements, that are offered to the public with a seriousness that would indicate honest intention. All of

them figure from an assumption to an estimate, both of which may be radically wrong, and neither is actually right.—*Minneapolis "Market Record."*

The present tariff is, on the whole, a fair and just one, giving equal protection to manufacturer and consumer. It would be well to leave it as undisturbed as possible until some more favorable opportunity for its amendment arrives.—*Montreal "Canadian Journal of Commerce."*

It is said that the grain-elevator men of New York and vicinity, and we suppose of Buffalo also, have agreed to stop business if the Linson Elevator Bill becomes a law. This bill provides for the establishment of flour floating elevators, to be run by the State, with a fixed charge of one-quarter of a cent per bushel for transferring. It is claimed that \$28,000,000 are invested in stationary and floating elevators, and that this capital would be virtually sunk if the Linson Bill becomes a law.—*Chicago "American Elevator."*

Bradstreet's (Journal) makes absurd pretensions of knowing how much wheat remains in farmers' hands. It can have no such information as it pretends to have.—*Chicago "Daily Business."*

THE STATUTE OF LIMITATION.

Every man among our patrons, whose business extends into the various States and Territories, will find the following table of times of barring claims on notes and open accounts, by the statute of limitation, a valuable one for preservation and reference:

	Open Ac.		Open Ac.		
	Notes.	counts.	Notes.	counts.	
	Years.	Years.	Years.	Years.	
Alabama.....	6	3	Missouri.....	10	5
Arizona.....	5	3	Montana.....	8	5
Arkansas.....	5	3	Nebraska.....	5	4
Calif'ra, if made in State	4	2	Nevada.....	4	2
" if not	2	2	New Hampshire....	6	6
Colorado.....	6	6	New Jersey.....	6	6
Connecticut	6	6	New Mexico.....	6	4
Dakota.....	6	6	New York.....	6	6
Delaware.....	6	3	North Carolina....	8	3
District of Columbia...	3	3	Ohio.....	15	6
Florida.....	5	2	Oregon.....	6	6
Georgia.....	6	4	Pennsylvania.....	6	6
Idaho.....	5	4	Rhode Island.....	6	6
Illinois.....	10	5	South Carolina....	6	6
Indiana.....	10	6	Tennessee.....	6	6
Iowa.....	10	5	Texas.....	4	2
Kansas.....	5	3	Utah.....	4	2
Kentucky.....	5	5	Vermont.....	6	6
Louisiana.....	5	3	Virginia.....	5	5
Maine.....	6	6	Washington.....	6	3
Maryland.....	3	3	West Virginia....	10	6
Massachusetts.....	20	6	Wisconsin.....	6	6
Michigan.....	6	6	Wyoming.....	5	4
Minnesota	6	6	Ontario.....	6	6
Mississippi.....	6	3	Quebec.....	5	5

ROLLS.

J. MURRAY CASE.

IX.

It is not my object in this article to speak of the mechanical construction of rolls, but rather of their work. The mechanical device for delivering the feed upon the rolls evenly is one of very great importance. If the feed is not distributed perfectly, but is permitted to run in streams at some points, and very thin at other points, under such circumstances the roll can not possibly produce good work. If we could take this sheet of material passing thus imperfectly to the rolls and have it spread, or rather delivered, upon a plane surface precisely as it goes to the rolls, and then magnify this surface a number of thousands of times, we should be able to see in what condition the material enters the rolls. Where the material was passing through in streams, those points would appear mountain ranges, and where there were bunches, these would appear like great hills, and in the intermediate spaces between we should have great valleys. Now, the result of the operation of the rolls upon this imperfectly spread material is to crush these mountain ranges, so to speak, down hard upon the non-resisting surface, and consequently to produce a caking of the material; while in-

termidately between these spaces, or within the valleys, so to speak, the material is scarcely touched, and consequently passes through without grinding.

Thus, two very serious injuries are the result: First, the streams are ground too hard, so as to produce the caking; and, second, in the valleys, or spaces where the material is thin, we have little or no grinding. Not only do these two serious effects follow, but another almost as objectionable, and that is, while the rolls are passing over the elevated bunches, or what we denominate the hills and mountain ranges in the magnified condition of the material, the rolls are thrown apart, and then they are instantly forced together again by the stiff spring action; and in this forcing together we have what may be compared to a thousand strokes of a hammer per minute. The effect of this is to cause a jarring of the entire frame. This is what produces that growling noise about which we have often had the question asked, "What makes my rolls growl?" It is done by the hammer action of the rolls, being forced apart by the imperfect feed and the surfaces striking as they fly together again. The uneven grinding and caking of stock thus produced is very detrimental.

Rolls should never be set too close. Sometimes millers find that they are not making a clean finish, and undertake to do so by closer grinding; the result is that the material becomes caked, and the finish is less perfect than before, for the reason that caked material will not bolt freely.

The length of rolls is also a question to be considered. We may with safety use long rolls in the breaks where they are not set closely together, and especially at the head of the mill, where but little heat is produced; but it has been the experience of the writer that in the use of very long rolls for middlings and for finishing the branny stock, they will not grind perfectly from end to end of the rolls, and that there is a limit to the length of the smooth roll. The reason of this is that in the heating action of the material there is an unequal expansion; the center of the roll does not radiate its heat as rapidly as the end, and consequently it becomes arched to a small degree, thus producing a grinding action in the center of the roll for 20 or 25 inches, beyond which it is frequently found that scarcely any grinding is done. Any effort to use a smooth roll longer than 30 inches will be found in general to produce no more work than one of shorter length. The best size, according to the experience of the writer, for a smooth roll for large mills, where the greatest capacity is expected to be got out of a given number of rolls, would be 25 inches long. With this length and the feed distributed properly from end to end, as much grinding will be accomplished substantially as with rolls 40 inches in length. I will say, however, that there are places in a mill where 40-inch rolls may be used to advantage; that is on the first breaks, where there is but little heat produced; and they may also be used for sizing the germ material in cases where the grinding is done with reference to sizing and the making of fine middlings, instead of flour. In this case the heat is much less than where close grinding is done, besides which there is no effort at making flour.

The heating of rolls may be traced to many causes, the first one of which is overloading and attempting to do too much work upon a given surface. If a roll is overloaded it will do far less work than where it has its legitimate feed, and there is also much greater liability to caking. The material in a horizontal roll should never be delivered directly into the center of the roll, for the reason that in so doing it is liable to drift, as it were, in spots and bunches. The most perfect delivery of material upon rolls is the laying of it upon the surface of one of the rolls in such a manner that it will spread itself.

In horizontal rolls I have often stopped the "growling," so called, by putting in a deflecting board in such a manner that, instead of the feed dropping down into the center of the roll, it is delivered over onto the side of the roll. This spreads it more perfectly, and instantly the growling noise ceases; and not only that, but the grinding will be found to be very greatly improved, and very much more of a reduction performed. It will also be found that the rolls

may be set farther apart and at the same time perform their function, for the reason that, whenever material is passing in bunches, the set must be so as to permit the rolls to spring forward when forced open by passing over the elevated points.

In relation to the perfect delivery of feed upon a roll, there can be little doubt that in a roller-mill constructed with one roll above another, whereby the material is delivered substantially at right angles with the roll, the spreading of the material is thereby very greatly assisted, and this advantage will go a great way towards making the 2-high roller-mill the standard mill of the future, for the most perfect distribution of the stock over the entire surface is the most neglected yet most important element in roller-mills.—*London "Millers' Gazette."*

WINTER WHEAT CONDITIONS BAD.

According to a Chicago report of March 15, the condition of the winter wheat is bad. That report says: During the last thirty days the winter wheat crop has been subjected to three very severe freezes, each one of which injured the crop to a certain extent. The freezes of the 27th and 28th of February were the hardest of them all, and the reports now show with the return of milder weather that, taking the crop as a whole, it received a setback. The broadest and most conservative and satisfactory statement which can be made as to the general condition of the crop to-day is this, that it does not look as well as it did a year ago at this time. Reports of winter killing a year ago were the exception, and now, while they are not the rule, with the return of mild weather, they are on the increase. The southern portion of the wheat belt seems to have been the most injured. Tennesseeans report that they had ten days of cold weather, ice and snow, then thawing and freezing; mercury down to 16°. The wheat looks as dead as a mackerel. It may sprout up again, but it must make the start from the root. Some farmers report that early wheat is dead, but that the late wheat will sprout again. This will make short heads and small grain. The wheat looks black south of Nashville, yellow and dead.

In Southern Illinois the report is that a great deal of the early wheat is killed outright. Some estimate the percentage of the crop killed as high as 30 per cent. In Central Indiana the reports of the damage are much greater and more widespread than at any time on the crop. These reports of damage come from sections where the best wheat is grown. On the clay ground the roots are dead and black in a great many cases, showing that the plant is ruined. In Northern Ohio the wheat is reported still in excellent condition. The recent cold weather did not damage it. The heavy rains settled in the ground and the plant was in good condition to withstand the freeze. In Central and Southern Ohio the late freeze killed the tops of the wheat, but not the roots. The hardest time on the wheat in Southern Ohio is yet before it. In Michigan reports show that the last freeze hurt the wheat. The tops have mostly turned brown, and, owing to the freezing and thawing, it is heaving out. The extent of damage can not be known until the crop commences to grow. In Missouri reports are conflicting. In some sections of the State it is reported that the last freeze was very severe on the crop. The recent rains were a salvation to it. If the dry freezing weather had continued for two days longer, there would not have been in some counties over half a crop. Some areas report at least 25 per cent. of the crop damaged. Reports from Kansas, particularly from the northern and central sections of the State, show some damage to the winter wheat. The weather for the last twelve days has been more injurious to the crop than any in March, 1889.

A report from Springfield, Ill., dated March 17, says: Never in the history of wheat-raising in Illinois has the prospect for a good crop changed more materially than within the past ten days. Up to March 5th the winter had been mild and the wheat plant was never in a more healthy and apparently prosperous condition. The plant had been advanced by the favorable weather and, the time of year hav-

ing arrived, was just ready for a vigorous start on a spring growth. The plant was full of healthy sap, which had risen to such an extent that it was very susceptible to the hard frost when it came. The freeze of a week or more ago was more serious than was at the time supposed. Samples were presented at the meeting of the State Board of Agriculture on the 11th from seven counties in central and southern Illinois. In these samples, which were taken up by the root, it was found that the bulb of the root at the top of the ground was a mass of gum, or jelly, showing conclusively that the germ of the plant had been killed. This condition was found more extensively in the Fultz wheat, of which variety a large proportion is seeded in portions of the state where the land is, or has been, inclined to be swampy. It is a swamp wheat and does not seem to have stood the frost nearly so well as the old golden-chaff or Mediterranean. The frost, which has been still more severe within the past few days, has certainly not improved the prospect. In fact, the freeze of Friday and Saturday nights has been even more severe on the crop than that of the previous week, and the damage is very serious.

U. S. COURT PATENT DECISIONS.

A patentee will not be permitted to say that certain specified elements of his combination claim are not essential to the combination.

An alleged combination which consists in a mere aggregation of parts, each to perform its separate and independent function substantially in the same manner as before combination with the other and without contributing to a new and combined result, is not patentable.

An article having a distinct commercial value of its own can not be made a Trade-Mark for another article by being attached to and sold with it.

The purchaser who buys a machine or device, patented or unpatented, without any restriction as to the mode or extent of the use to which he may apply it, acquires all the rights of the seller and may do with it whatever the seller might have done if he had not parted with it.

A mere carrying forward or more extended application of an original idea—a mere improvement in degree—is not invention.

"ACKNOWLEDGE THE CORN."

Says the Chicago "American Elevator": The phrase "acknowledge the corn" is variously accounted for, but the following is a true history of its origin. In 1828 Alexander Stewart, Member of Congress, said in a speech that Ohio, Kentucky and Indiana sent their haystacks, cornfields and fodder to New York and Philadelphia for sale. Wickliffe, another member, called him to order, declaring that those states did not send their haystacks and cornfields to the Eastern cities for sale. "Well, what do you send?" asked Stewart. "Why, horses, mules, cattle and hogs." "Well, what makes your horses, mules, cattle and hogs?" queried Stewart. "You feed \$100 worth of hay to a horse; in doing that you just animate your haystack and get on top of it and ride off to market. How is it with your cattle? You make one of them carry \$50 worth of hay to the Eastern market. How much corn does it take to fatten a hog, Mr. Wickliffe?" "Thirty-three bushels," replied the man from Kentucky. "Then you just put 33 bushels of corn into the shape of a hog and walk him off to market," said Stewart. At this point in the debate Wickliffe sprang to his feet and exclaimed very hurriedly: "Mr. Speaker! Mr. Speaker! I acknowledge the corn." The incident caused quite a laugh among the members and was never forgotten.

WHEAT THAT DID NOT SHRINK.

Professor Shelton describes an experiment that was conducted at an experimental station to ascertain the shrinkage of wheat when held in the bin over winter, and by which it was discovered that wheat does not always shrink. A long sack was prepared and filled with 200 pounds of wheat, accurately weighed. On Nov. 12 this was placed in a grain-bin,

and in order that the grain in the sack might fairly represent the average of that in the bin, which held 150 bushels, the sack of wheat was sunk in the grain to an average depth of about two feet. In this position it remained six months, or until May 12, when it was brought forth and again weighed. This second weighing showed a slight increase on that of six months before, the weight being 200 pounds plus a fraction of one pound. This result was most unexpected and goes to show that during some seasons wheat does not shrink nearly as much as is claimed, and much less than is deducted at terminal elevators to allow for shrinkage. The slight increase in the weight of this sack of grain is probably due to the fact that the sack itself absorbed moisture from the surrounding grain, as when exposed to the rays of the sun it shrank exactly one-half pound in 3½ hours. Some of the grain-dealers' associations should look into this matter of shrinkage and determine exactly the amount they lose in this way when they hold their grain.

AMERICAN CORN IN SCOTLAND.

The attempt to make a proper exhibit of American corn at the Paris Exposition failed from lack of adequate financial support. Col. C. J. Murphy, who was very active in the matter and was greatly disappointed at the failure, is now making an effort to have this great American cereal represented as it ought to be at the Edinburgh International Exhibition next May. The material of the Nebraska Corn Exhibit, which closed last January, has been prepared for shipment to Edinburgh, and as the exhibit was a very fine one it will probably be almost sufficient in itself for a most creditable display in Edinburgh. The object is a thoroughly practical one. F. H. Underwood, late United States Consul at Glasgow, writes Mr. Murphy that "the people of this country [Scotland] are vitally interested in the matter of cheap wholesome food, and up to this time our Indian corn has been very little used." And as it is in Scotland, so it is in most parts of Europe. The practical importance, therefore, of making a suitable exhibit at Edinburgh is sufficiently obvious. There ought to be no failure from lack of funds, as there was at the Paris Exposition. Col. Murphy says that \$3,000 will be required in order to make the exhibit what it should be, and this amount he asks from the Exchanges in Chicago, St. Louis and other Western cities. The sum is not a large one, and there certainly ought to be no difficulty in raising it, provided proper guarantees are given that it will be properly applied.

PACIFIC coast merchants, farmers, fruit-growers, wine-producers, manufacturers, miners and farmers are petitioning Congress to repeal, at once, the 4th and 5th, or long and short haul, sections of the Fool Interstate Commerce law. Farmers in Kansas, Iowa, Nebraska and other central States are doing the same thing. Evidently the farmers, who were to gain so much by these fool clauses of this fool law, are getting their eyes opened to the real importance of the railroads to the farming interests of the West. The sections mentioned should be repealed at once—together with the whole fool enactment known as the Interstate Commerce law. Delay is unnecessary. Intelligent public sentiment favors the repeal, absolute, unconditional, immediate.

IMPORTANCE OF THE AMERICAN SUPPLEMENT TO THE ENCYCLOPÆDIA BRITANNICA.—The Ninth Edition of the "Encyclopædia Britannica" has been completed, 14 years after the date of the preface of its first volume, January 1, 1875. Its 24 volumes contain a marvelous condensation of the world's knowledge in all departments. Its principal articles are exhaustive treatises on their respective subjects. So far as science, philosophy, art and general history are concerned, the "Encyclopædia Britannica" is, beyond question, the most complete and valuable work of its kind in any language. It is not surprising, therefore, that this work has obtained wide recognition in the United States. The publishers of the Edinburgh edition have openly stated that four-fifths of their subscribers are Americans, yet out of the hundreds of writers who have contributed to the treasure-house of the "Encyclopædia Britannica", less than 50 have been Americans, and most of these have written but a single article. It is not surprising, therefore, that the statements of American history and biography, the accounts of the natural history, resources, material, social and intellectual development of this giant Republic of the New World

should be, in most cases, utterly inadequate. The whole work required careful study by American scholars and men of affairs, for the purpose of detecting such omissions as no British editor could appreciate, and of supplying such additional articles as would fit the work for the actual every-day needs of intelligent Americans of every class. The editors of the "American Supplement" have directed their attention chiefly to matters of vital interest to American readers. They have carefully avoided any repetition of what is comprised in the original work, but have sought to present what is essential to adapt the work to this country. In another respect, of special importance to all readers, the "Britannica" was felt to need careful enlargement. That work has faithfully adhered to the singular rule that no biographies should be inserted of men who happen to be living when the volume is prepared. Hence the great work now completed has not merely passed by great men still living, but has failed to notice, except in the most incidental way, Generals Grant and Sheridan, Presidents Garfield and Arthur, Garibaldi, Gambetta, Gortschakoff and Lord Beaconsfield. It is silent about Bismarck and Gladstone, Blaine and Parnell. The editors of the "Supplement," pursuing a different method, and anticipating the popular demand for knowledge of all these generals, statesmen, scientists, poets and historians, have supplied interesting articles full of accurate information in regard to their lives and achievements. In natural science the "Britannica" seems often to attempt to anticipate the future, but in literature and biography it confines itself strictly to the past. The "Supplement," by careful statement of facts in these departments, goes far toward giving a life-like picture of the social, political, scientific and literary world of to-day. The "Britannica" by its name and character belongs essentially to the Old World, the "Supplement" treats fully of the New in addition to the Old. Together they exhibit in its entirety the whole sphere of human activity, and constitute an intellectual Cosmos.—From the American Bookseller, June 1, 1889. J. H. Matteson is agent for the above work in Buffalo, N. Y., and his address is No. 16 East Eagle street. The address of the publishers, Messrs. Hubbard Bros., is 723 Chestnut street, Philadelphia, Pa.

BOOKS AND PAMPHLETS.

The good housewives who hardly know how to adapt the table of the Lenten season will appreciate *Good Housekeeping* for March 15, which opens with a special paper on that subject, and presents variety sufficient to tempt the palate of an epicure, without transgressing the proprieties of the season. There are some half-dozen other papers which have reference to the same subject, including one on "Food for Infants," a pithy story on "Match Making to Order." Three evening entertainments are interestingly described and will be welcomed by the young people. There is the usual variety of good verse—*Good Housekeeping* is noted for readable, sensible poetry—and various other interesting articles.

A NEW METHOD OF TREATING DISEASE.

HOSPITAL REMEDIES.

What are they? There is a new departure in the treatment of disease. It consists in the collection of the specifics used by noted specialists of Europe and America, and bringing them within the reach of all. For instance the treatment pursued by special physicians who treat indigestion, stomach and liver troubles only, was obtained and prepared. The treatment of other physicians, celebrated for curing catarrh was procured, and so on till these incomparable cures now include disease of the lungs, kidneys, female weakness, rheumatism and nervous debility.

This new method of "one remedy for one disease" must appeal to the common sense of all sufferers, many of whom have experienced the ill effects, and thoroughly realize the absurdity of the claims of Patent Medicines which are guaranteed to cure every ill out of a single bottle, and the use of which, as statistics prove, *has ruined more stomachs than alcohol*. A circular describing these new remedies is sent free on receipt of stamp to pay postage by Hospital Remedy Company, Toronto, Canada, sole proprietors.

SPECIAL NOTICES.

BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.

Columbus, Ohio.

Office and Factory, 5th Street, north of Naughton.

TOLEDO MILL PICKS AND STONE TOOL MFG. CO.

Manufacturer

and Dresser of

MILL PICKS.

Made of the best double-refined English cast steel. All work guaranteed. For terms and warranty, address, GEO. W. HEARTLEY, No. 297 St. Clair Street, Toledo, Ohio. Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

ALSO MANUFACTURERS OF

Shafting, Pulleys, Hangers, Coupling, Machine and Jobbing, Etc., Etc.



Practical Notes

TO PREVENT THE SLIPPING OF BELTS.—One good way to prevent belts from slipping is to paint the face of the pulley. This can be done by using hot asphaltum or white-lead made very thin with turpentine. It will adhere well if allowed to dry thoroughly. A thicker coat of white-lead and oil should then be applied and allowed to dry thoroughly before being used. These coatings will not scale off if properly applied.

GENERAL NOTES.

THE Argentine Republic, South America, has nearly 4,000,000 inhabitants, 25,000,000 cattle, 71,000,000 sheep, 4,500,000 horses and live stock worth \$367,000,000. The country contains 515,000 square miles, divided among 14 states. It has mines of gold, silver, lead, tin and copper, and its forests abound in costly woods. The paper currency has been inflated to \$160,000,000, and the banks are not compelled to redeem their bills. The ingoing farmers are assisted by the government, and they are all mortgaged heavily at the start. The national debt is \$336,341,442, with an interest charge of \$16,025,000 a year. The total debts of the nation, of the provinces and of Buenos Ayres City are \$574,068,446. A financial collapse is imminent.

HORSE-POWER.

Nominal Horse-power.—This term is employed as a measure for the size of engines and relates to the cubic contents of cylinders. It has almost gone out of use, because the condition of speed and pressure assumed do not apply to modern practice. For commercial purposes and for those not acquainted with mechanics, it is a convenient form for defining the size of engines. The nominal horse-power of a modern high-pressure engine is about four-tenths of its actual power. A rule for computing is to multiply the square of the cylinder's diameter in inches by the cubic root of the stroke in the feet and divide by four.

Indicated Horse-Power.—This term is employed to define the pressure exerted by the pistons of engines and is the mean pressure multiplied by the area of the piston in inches and by the velocity in feet per minute. This gives foot-pounds, that is, pounds raised one foot high in a minute; 33,000 of these foot-pounds are estimated at one horse-power, so that dividing by this number gives the indicated horse-power.

Actual Horse-Power.—From the indicated power of an engine there must be deducted certain losses by friction in the engine, friction of transmitting machinery, clearance at the ends of the cylinder, and leaks; so the actual performance of the engines, estimated from a second mover, is commonly ten per cent. less than the computed or indicated power.

MILLING PATENTS.

Among the patents granted March 18, 1890, are the following:

Robert Schultze, Covington, Ky., No. 423,635, a centrifugal bolt, comprising the combination of the bolting-chest, the heads secured to the ends thereof, the sheet-metal shell bent around the rear portion of said heads, the plates extending lengthwise of the chest and secured upon said heads, the longitudinal partition upon which the lower edge of the shell rests, the bolting-cloth stretched around said heads from the edge of shell to the plates, and means to stretch and hold the bolting-cloth in place, the hoop-segment to support the bolting-cloth at its center, and the flier having spirally-inclined blades arranged to revolve within the reel formed by the sheet-metal shell and bolting-cloth.

John M. Charnock, Boston, Mass., No. 423,671, a drier for drying grain and other articles, comprising the combination

of a rotary drum, the conductor or conduit contained in said drum, and an escape passage or outlet in said conductor, formed by the lapping of a section of the conductor of one diameter upon the end of a section of the conductor of small diameter to form a circular passage between the lapping ends of the two sections, with a valve arranged to slide longitudinally upon one of two sections and having a beveled entering section, and the combination of the slightly-inclined rotary drum having lifting-shelves upon its inner side, the air conductor or conduit, an air-supply pipe connected with the lower end thereof, and a fan for forcing air through said pipe and conduit, a feed-pipe for the material to be dried, extending through said conduit and opening beyond the upper end thereof, and a supply-fan for forcing the material to be operated upon in said drum through said pipe.

Orville Simpson, College Hill, O., No. 423,704, a grinding-mill, comprising the combination of a pivotal lighter-bar vertical spindle, buhrs, regulating-screw, hand-wheel, hollow post or cylinder, loop or stirrup at lower end of regulating-screw, transverse bar of said stirrup, break-pin mounted in said stirrup slightly above said transverse bar, and cushion or spring mounted on the upper end of said regulating-screw intermediate the top of said hollow post and hand-wheel.

Julius T. Lee, Boston, Mass., No. 423,783, a combined shaking and revolving bolt, comprising the combination, with the bolting-chest, of a bolt having top and bottom screens, a shaft to which it is secured and which is supported in bearings that allow it a revolving and vibrating motion, a driving-shaft having a crank, a pitman connected thereto at one end, and a universal joint connecting the pitman and the bolting-reel shaft, whereby the bolt is given a vibrating and at the same time allowed a revolving movement.

James M. Haggard, Iowa City, Ia., No. 423,876, an automatic grain-measure.

WHEAT AND CORN SUPPLIES.

According to the market reports, the government figures on corn and wheat for March "smashed" values rather badly. That result is not the fault of the report, and a comparison of figures compiled for several years fails to show why the March report this year should have "smashed" values. For instance, the status of wheat and corn on March 1 for the past five years was reported officially as follows:

	WHEAT:			
	March 1. Bushels in Farmers' Hands.	Bushels Visible Supply.	Total Bushels.	From total Crop of
1890.....	156,000,000	28,000,000	184,000,000	490,000,000
1889.....	112,000,000	32,000,000	144,000,000	416,000,000
1888.....	132,000,000	38,000,000	170,000,000	456,000,000
1887.....	122,000,000	58,000,000	180,000,000	457,000,000
1886.....	107,000,000	52,000,000	159,000,000	357,000,000
CORN.				
1890.....	970,000,000	15,000,000	985,000,000	2,000,000,000
1889.....	787,000,000	16,000,000	803,000,000	1,936,000,000
1888.....	508,000,000	9,000,000	517,000,000	1,456,000,000
1887.....	603,000,000	16,000,000	619,000,000	1,665,000,000
1886.....	775,000,000	11,000,000	786,000,000	1,986,000,000

THE TRUE WEIGHT OF WATER.

The weight of water has been corrected by a late report of the Standard Office of the English Board of Trade. The act of Parliament of June, 1824, in fixing the weight of the imperial pound, stated that a cubic inch of distilled water, weighed in the air by brass weights at a temperature of 62° Fahr. and barometer at 30 inches, should equal 252,458 grains; and the standard Troy pound should be 5,760 such grains, and the avoirdupois pound 7,000 such grains Troy. The gallon was to equal 10 pounds avoirdupois of distilled water weighed as described; and the capacity of the imperial gallon thus became 277,274 cubic inches, representing 70,000 grains. A cubic foot of water was reckoned to weigh 62,321 pounds avoirdupois. This same standard was adopted by the Sale of Gas Act of 1859. The Standard Office now reports that it has been experimenting since 1878 to ascertain "the true weight of a cubic inch of distilled water," and it shows that

the law of 1824 was based on weighings made in 1798. Their experiments lead to the conclusion that the real weight of this cubic inch of water is 252,286 grains, instead of 252,458 grains. This excess of about one-sixth of a grain in the old weight makes the imperial gallon lose nearly 48 grains, or

it contains 69,952 grains instead of 70,000 grains. In a cubic foot of water we lose 297 grains. The gallon of water of 10 pounds now requires a capacity of 277,463 cubic inches, instead of 277,274 cubic inches, and the pint becomes 34,683 cubic inches instead of 34,659.

PREJUDICE Investigate the merits of the Reliance Safety Water Columns. It pays to keep posted. Many of the largest corporations have found it profitable to discard the old appliances and adopt these safeguards. There is always economy in safety. Send for illustrated price-list.

Reliance Gage Co., 831 Sheriff St., Cleveland, Ohio.

THE "HARLOW" Positive Feed Lubricators.

For Marine and Stationary Engines, Steam Pumps, Electrical and other Machinery.

MAXIMUM ECONOMY IN OIL. MARKED ECONOMY IN FUEL.

Not dependent upon or operated by Steam Pressure, Condensation or Gravity. Not affected by changes of temperature.

BEING operated by some moving portion of the engine or machine to be lubricated, the "Harlow Lubricator" starts and stops with the engine or machine being lubricated, without requiring the slightest attention from the engineer or operator, always delivering the oil in any amount from a drop to a constant stream.

The cup can be filled at any moment while the engine or machine being lubricated is in operation, without causing any leakage either of oil or steam.

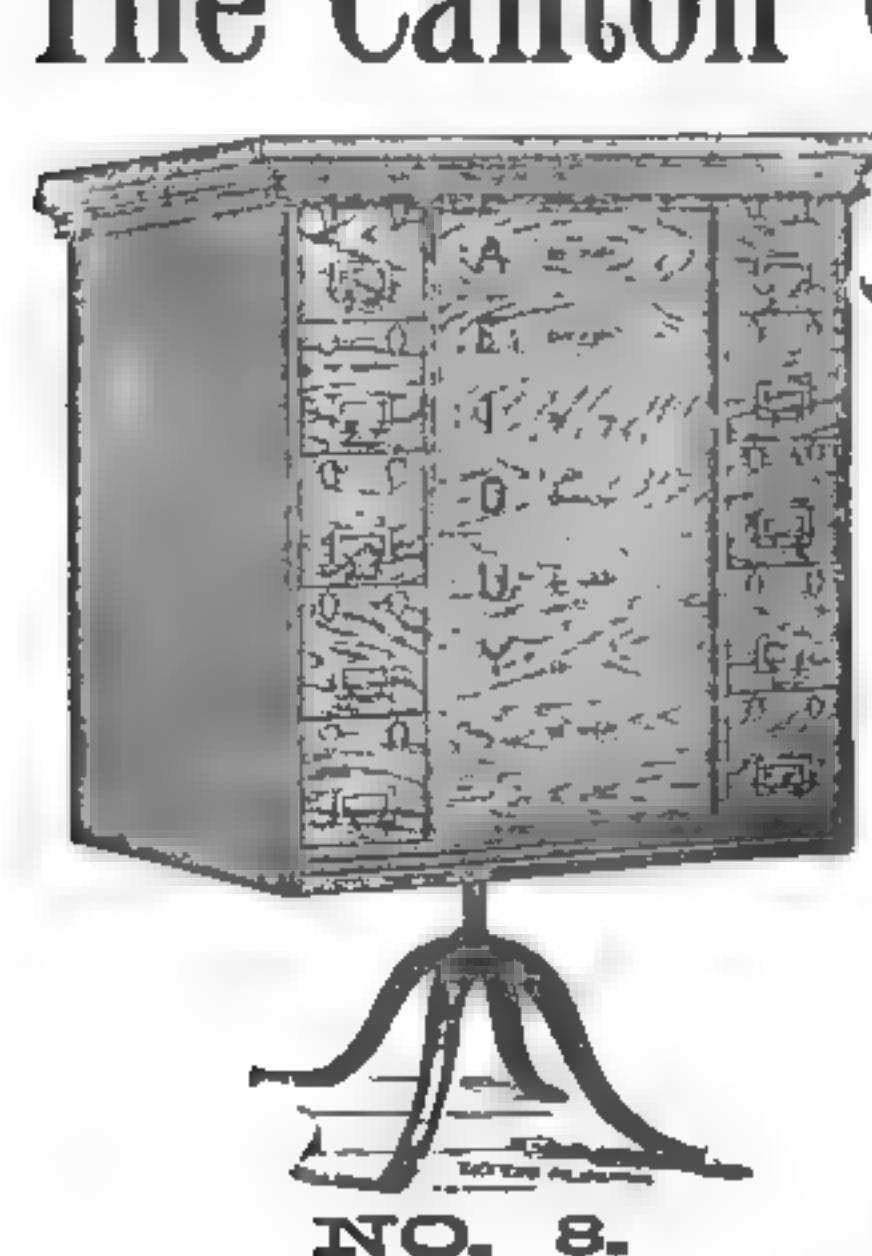
Harlow Lubricator Mfg. Co. BOSTON, Mass. U. S. A.

PLEASE mention THE MILLING WORLD when you write to advertisers. It will pay you to do this.

STANLEY'S NEW BOOK.

5,000 good active agents wanted at once, either sex to introduce this great work. Here is a chance for you. Any one can sell the book, as the whole world is interested. The book will contain a full account of all of Stanley's Explorations in Africa, and especially of his Latest Expedition for the Relief of Emin Bey. About 600 pages and 100 entirely new illustrations, maps, etc. Complete canvassing outfit with all instructions will be mailed on receipt of 40 cents. Do not delay in writing; order outfit and get territory at once. The only genuine new Stanley book out. ADDRESS, Peerless Publishing Co., 808-10-12 Olive Street, St. Louis Mo.

THE INK
WITH WHICH THIS PAPER IS PRINTED
IS MADE BY THE
QUEEN CITY PRINTING INK CO.
CINCINNATI, O.



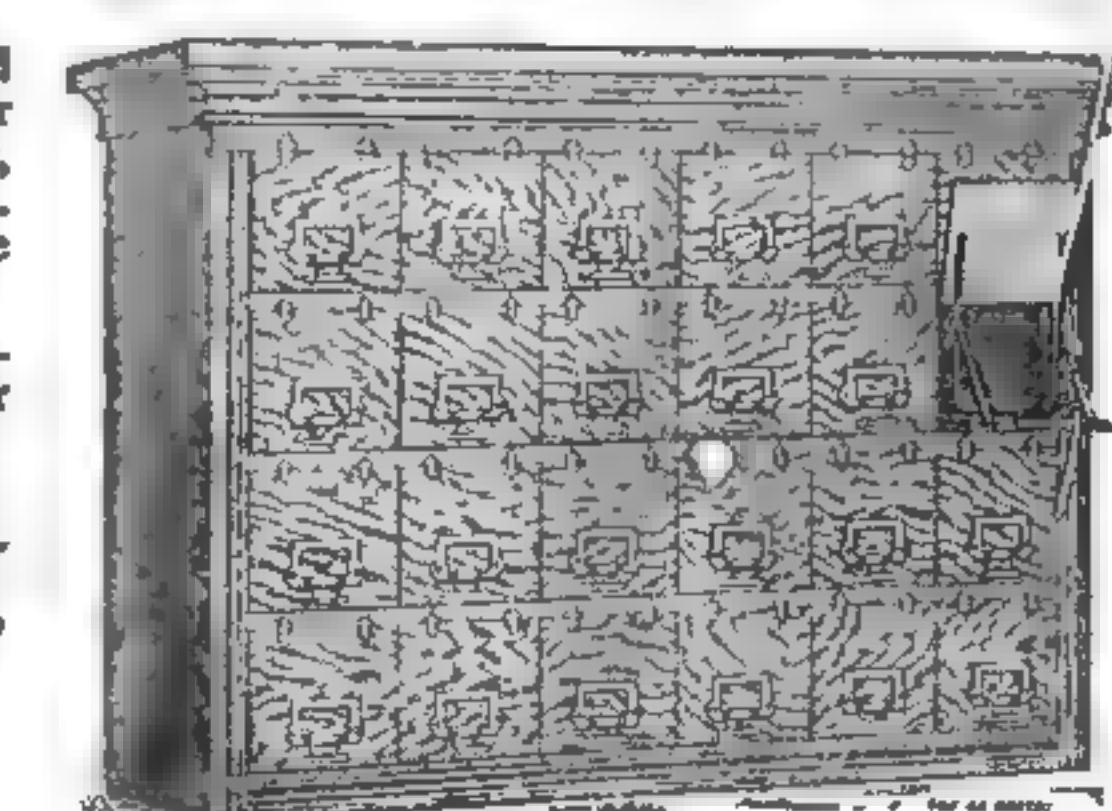
The New Buckeye Document Case & Letter File; Also All Kinds Office Furniture

NO. 8 Represents one side of one of our Revolving Cabinet Letter Files and Document Cases Combined. It contains 30 Document Drawers and 8 Letter File Drawers. In filing letters we use first VOWEL of name on front of drawer, and LETTER FOLLOWING first VOWEL on Index Sheet within drawer. We also make more exhaustive systems which contain from 6 to 100 or more Filing Drawers.

NO. 1 Represents one of our small Document Cabinets, for use on desks or brackets. Action of drawer can be seen in the cut. When front is raised inner drawer comes forward, exposing contents of drawer for inspection.

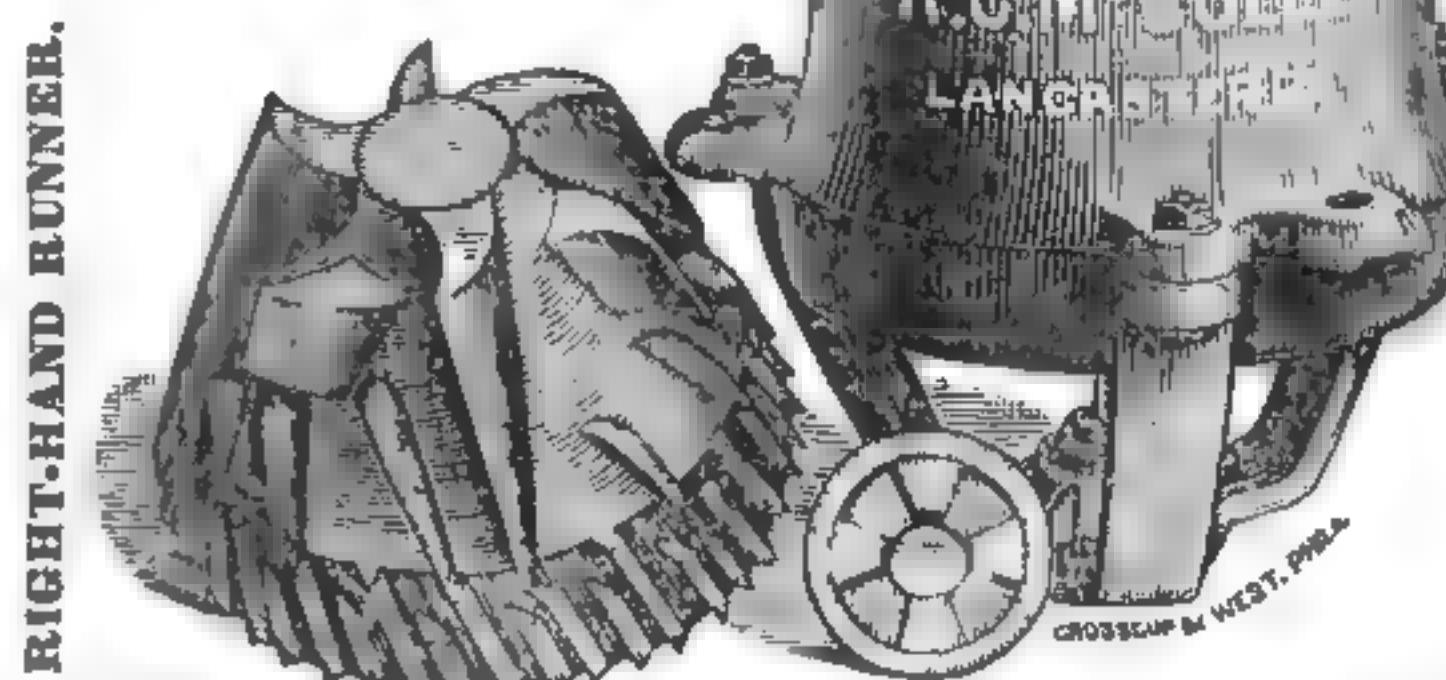
Our Cabinet Files are conceded to be the Most Convenient of any in the Market. They are Compact, Simple, Complete, Durable and Ornamental.

SEND FOR PRICE LIST AND CATALOGUE.



THE BEST AND CHEAPEST CORN AND COB CRUSHER IN THE WORLD.

LEFT-HAND MILL.
DRIVEN FROM ABOVE.

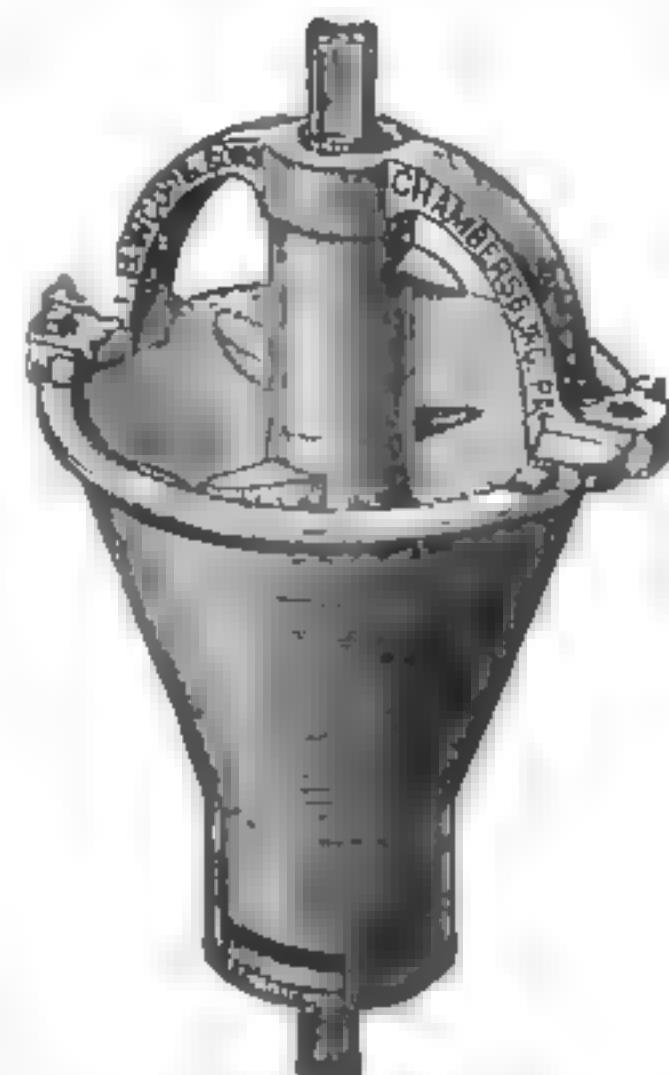


All wearing parts cast of a steel mixture. Notice difference in construction. Most area where most work is done, where all other crushers have least area where most work is done. Low priced machinery is not the cheapest, considering durability and efficiency. Sent on 30 days' trial when satisfactory reference is furnished.

Please Send for Circulars.

R. C. McCULLEY, LANCASTER, PENN.

\$15 WILL BUY THE BEST AND CHEAPEST CORN & COB CRUSHER IN THE WORLD.

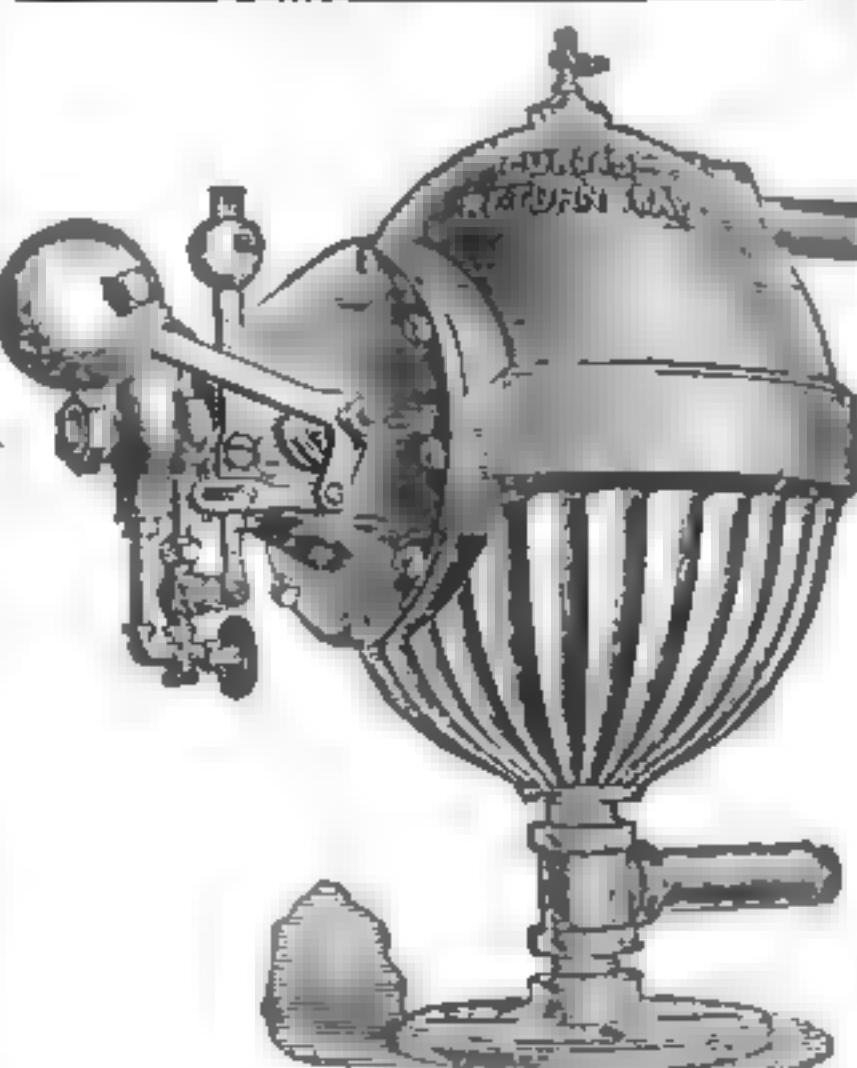


Our crushers are made of a "special quality" of material that insures years of service. Thousands of these crushers are in use throughout the United States and Canada. Send for circular, giving testimonials from millers who are using them, and know a good thing when they see it.

T. B. WOOD'S SONS, CHAMBERSBURG, PA.

Manufacturers of
Shafting, Pulleys, Hangers, Mill Gearing, Etc.

THE CURTIS PATENT RETURN STEAM TRAP.



IT is noiseless, positive, rapid, will return all condensation back into the boiler, and works equally well in connection with reduced pressure or exhaust steam, also when the return is below the water line of the boiler.

THE CURTIS REGULATOR COMPANY,
NO. 74 BEVERLY ST., BOSTON, MASS.

GENERAL AGENCIES.

New York, 109 Liberty st. Minneapolis, 210 S. Third st.
Philadelphia, 2085 N. Front st. Chicago, 218 Lake st.

The Canton Cabinet Filing Case Company, Canton, Ohio.

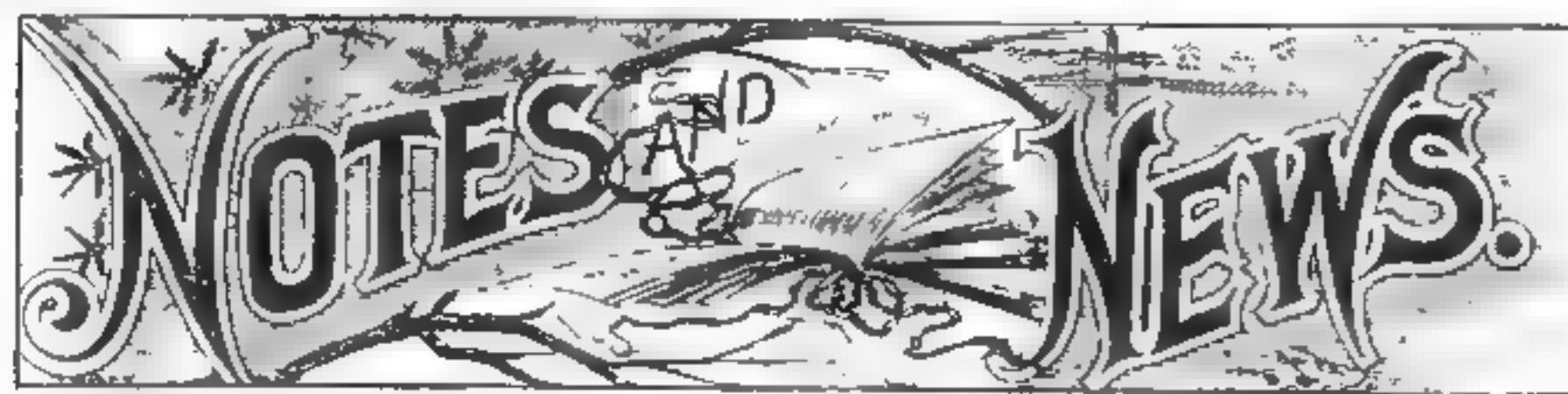
MANUFACTURERS OF

NO. 8 Represents one side of one of our Revolving Cabinet Letter Files and Document Cases Combined. It contains 30 Document Drawers and 8 Letter File Drawers. In filing letters we use first VOWEL of name on front of drawer, and LETTER FOLLOWING first VOWEL on Index Sheet within drawer. We also make more exhaustive systems which contain from 6 to 100 or more Filing Drawers.

NO. 1 Represents one of our small Document Cabinets, for use on desks or brackets. Action of drawer can be seen in the cut. When front is raised inner drawer comes forward, exposing contents of drawer for inspection.

Our Cabinet Files are conceded to be the Most Convenient of any in the Market. They are Compact, Simple, Complete, Durable and Ornamental.

SEND FOR PRICE LIST AND CATALOGUE.



J. Love, Love's Mills, Va., builds a flour-mill.
 Mrs. E. Hobart, miller, Carthage, Ill., sold out.
 G. Gelbach, miller, Tumwater, Wash., sold out.
 J. S. House, Taylorstown, Va., builds a flour-mill.
 F. M. Rogers, feed-mill, East Troy, Wis., sold out.
 J. W. Wells, Greenwood, S. C., builds a flour-mill.
 J. W. Riddle, Eagle Pass, Tex., enlarges grist-mill.
 J. C. Bright, Addison, W. Va., builds a roller mill.
 Wm. Rankin & Son, Rankin, Ky., remodel to rolls.
 J. Garst & Bro., Roanoke, Va., improved flour-mill.
 J. W. Detmore, Weston, W. Va., builds a flour-mill.
 Knight & Oliver's flour-mill, Blackstone, Va., burned.
 L. P. Doub, West Beaver Creek, Md., remodels to rolls.
 Lyman, Field & Co., Norfolk, Va., improved flour-mill.
 Gordon, Boyer & Co., Salem, W. Va., start a flour-mill.
 F. M. & S. J. Boy, Island Mills, Tenn., built a grist-mill.
 Brown & Redgood, De Sotoville, Ala., build a grist-mill.
 Dickson & McHenry, millers, Chatfield, Minn., dissolved.
 Whiting Bros., & Co., Glendale, W. Va., build a flour-mill.
 Williams & Ritchey, Burkesville, Ky., built a 50-barrel mill.
 A. N. Anderson's flouring-mill, Bloomfield, O., burned; loss \$4,000.
 Culpepper, Va., men project a 60-barrel flour-mill; machinery is wanted.
 J. C. Beery, Harrisonburg, Va., is building a 125-barrel roller flouring-mill.
 Jones & Wyckoff, millers, Hightstown, N. J., are succeeded by Geo. P. Jones.
 J. B. Morrell, Bryson, Tenn., adds corn-bolting machinery to his mill equipment.
 A. H. Curtis, Troy, Tex., will build a grist-mill at Waco, Tex. Machinery is wanted.
 C. H. Oliver, Oliver, Va., wants an outfit for a 25-barrel roller water-power flouring-mill.
 P. Faust & Co., New Braunfels, Tex., add a 100-horse-power turbine to their flour-mill plant.
 B. R. Faust, of B. R. Faust & Son, millers, Mill Creek, Hazleton and Mapleton, Pa., is dead.
 Jackson's flour-mill and elevator, Blenheim, Ont., Can., burned; loss \$8,500; insurance \$4,600.
 Love & Co., Meridian, Miss., are building a corn-meal mill with a daily capacity of 1,000 bushels.
 J. M. Hunter's flour-mill, Carter's Creek, Tenn., burned; rebuilds and wants an outfit of machinery.
 W. McNab and others, Barnwell, S. C., incorporated the Enterprise Mfg. Co., capital stock \$10,000, to build a grist-mill and other plants.
 C. P. Robertson, Chattanooga, Tenn., and others incorporated the Reliance Milling Co., capital stock \$100,000, to build a flouring-mill; an outfit of machinery is wanted.
 A farmer at Sargent, Neb., tested the actual cost of producing corn last year. After hiring all the necessary labor done, he estimates that his corn costs him 12 cents per bushel delivered in his cribs.
 The Knoxville Mill Supply & Machine Co., Knoxville, Tenn., have placed an order with the Case Mfg. Co., Columbus, O., for 8 pair of rolls, 4 flour-dressers, 1 bran-duster, 1 flour-packer and 1 centrifugal reel.
 An intelligent farmer gives the lowest price at which corn can be raised in the without loss at the various yields per acre. His estimate is as follows: Sixty bushels to acre 13 cents; 50 bushels 15 cents; 40 bushels 18 cents; 35 bushels 22 cents; 30 bushels 30 cents.
 The Michigan crop report for March says that 440 correspondents in the southern and 125 in the central counties report injuries to wheat dur

ing February, and the weather conditions during the month verify these reports. Not a sufficient amount of snow fell to benefit the wheat.

That corn is fuel has been affirmatively decided by a Wichita, Kansas, Justice in suit brought to satisfy a debt of \$100. A thousand bushels of corn belonging to a farmer named Steadman has been attached. Steadman said he was using corn for fuel, and that a thousand bushels was not more than sufficient to last a year, and the Justice ruled that under the law exempting a year's fuel the attachment could not hold.

A story is told of a San Francisco bank teller, who injured the cornea of his eye and went to Italy, where a doctor successfully grafted a chicken's cornea in his eye. The teller was quite elated at the success of the operation, claimed that he saw perfectly well, and upon his return resumed his position in the bank. He had only been at his desk three days when a wheat man from Porta Costa came in to draw out some money. He had just been down to the Board of Trade rooms, and carried in his hand a sample of wheat which he had been testing. When his money was counted out to him he carelessly dropped a few grains of wheat on the counter, when to his great surprise the teller jumped upon his stool and, flapping his arms in true chicken style, commenced to peck away at the wheat, which he swallowed with evident satisfaction.

A correspondent writes to the Montreal *Journal of Commerce*, concerning the mortgaged Canadians in Belleville: "Want of cash seems to be the universal condition in this section of the country. Farmers round here are all dreadfully hard pressed. They have for years past been endeavoring to compete with the North West in raising grain, and as a natural consequence have come to grief. At present I suppose fully 80 per cent of the farms in Hastings and Prince Edward counties are mortgaged to their full value. Now, when our farmers, at last convinced of their error, wish to change their mode of farming from grain-raising to live stock, cheese, butter and dairy farming, of course the existing mortgage stands in the way, and they can not secure the cash necessary for a fresh start; so that I am afraid the outlook is a black one, unless something can be done to assist them."

THE GRAIN PLANT LOUSE.

The most notable entomological event of the past season, says Professor Clarence Weed, of the Ohio Experiment Station, in a recent bulletin, has been the destructive appearance of the grain plant louse over a large portion of the State. The most remarkable occurrence in the whole outbreak was the suddenness with which it was checked by the appearance in the infested fields of enormous numbers of various species of parasitic and predacious insects. Chief among these were various species of lady-beetles, the commonest of which are *Coccinella sanguinea*, Lace-wing larvae, *Chrysopa*, *Syrphid* larvae and various species of parasitic hymenoptera. The lady-beetles and their larvae, peculiar, dark-colored, six-footed insects, generally with spots of a brighter color on their back, looking "half worm and half bug," were especially abundant in the fields. To get an idea of the percentage of wheat-heads upon which they occurred, 600 wheat-stalks were counted in one of the station fields shortly before harvest, keeping a record of the number of stalks having lady-beetles or their larvae upon them. They averaged nearly 6 per cent., or 6 lady-beetles to every 100 stalks. When the immense number of stalks in an acre of grain is considered, an idea can be got of the vast numbers of these little fiends at work in any of the infested fields. The outbreak was checked so suddenly that, although the insects had got well started in the oat-fields and threatened to do very serious damage, they were so cleaned out in many fields by the time of oat harvesting as to be difficult to find. The presence of English sparrows in the wheat field led some to believe that they were feeding upon the lice, but the examination of the stomach contents of a number shot on wheat showed the grain was what they were after, no more lice being eaten than was necessary to get the grain. Several experiments with kerosene emulsions were tried to destroy the lice, and it was found that it killed those with which it came in contact, but the difficulty of reaching them with this substance, when they occurred on the under surface of the leaf or were embedded in the chaff of the head made the remedy hardly practical.



W.A. BINGHAM,
 MANUFACTURER OF
FLOUR SACKS.
 178 Duane Street,
 New York. MILLERS' FLOUR SACKS A SPECIALTY.

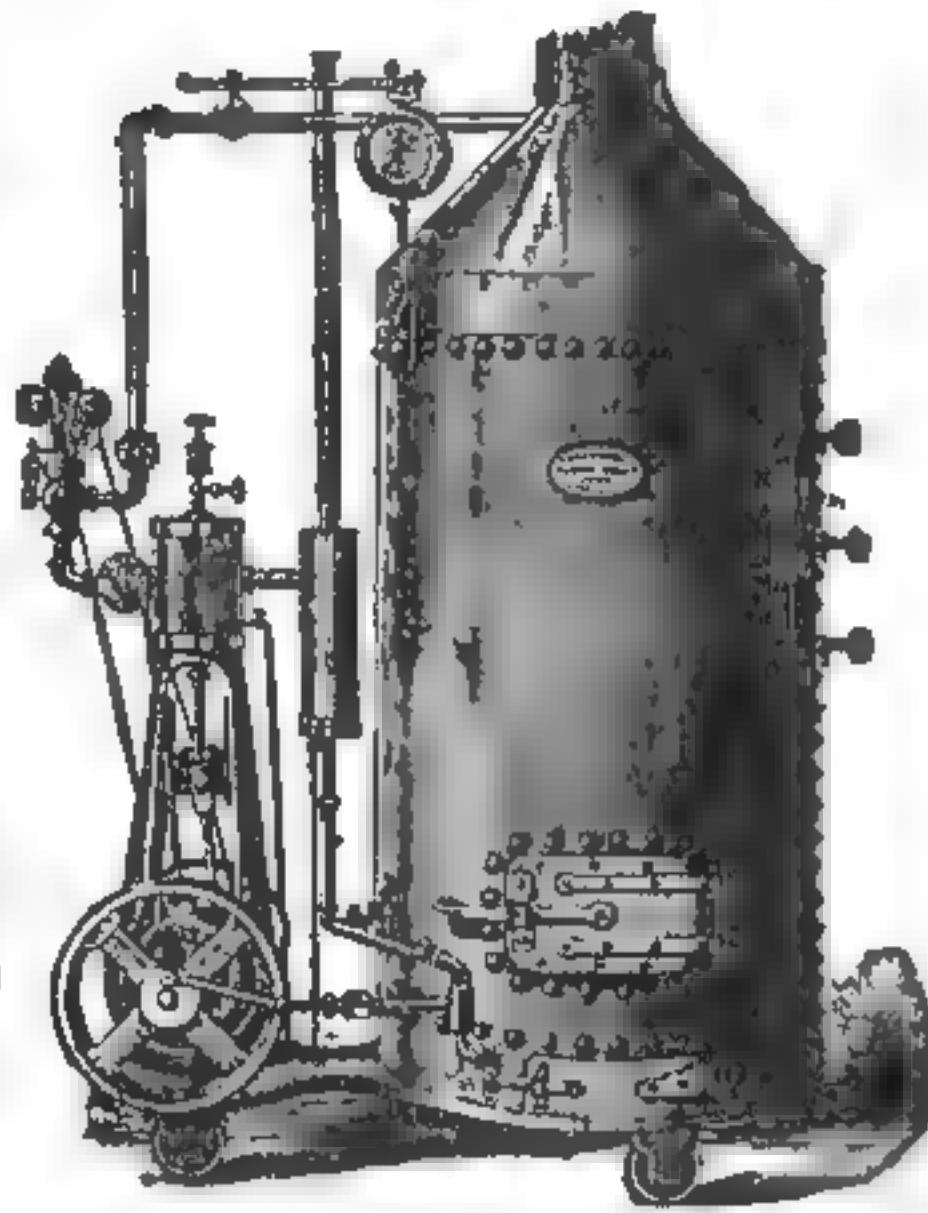


THE BEST ARE THE CHEAPEST.
 THE PATRONAGE of the MILLING TRADE is MOST RESPECTFULLY SOLICITED.



TONAWANDA
ENGINE AND BOILER WORKS

A Large Assortment of Machinery.

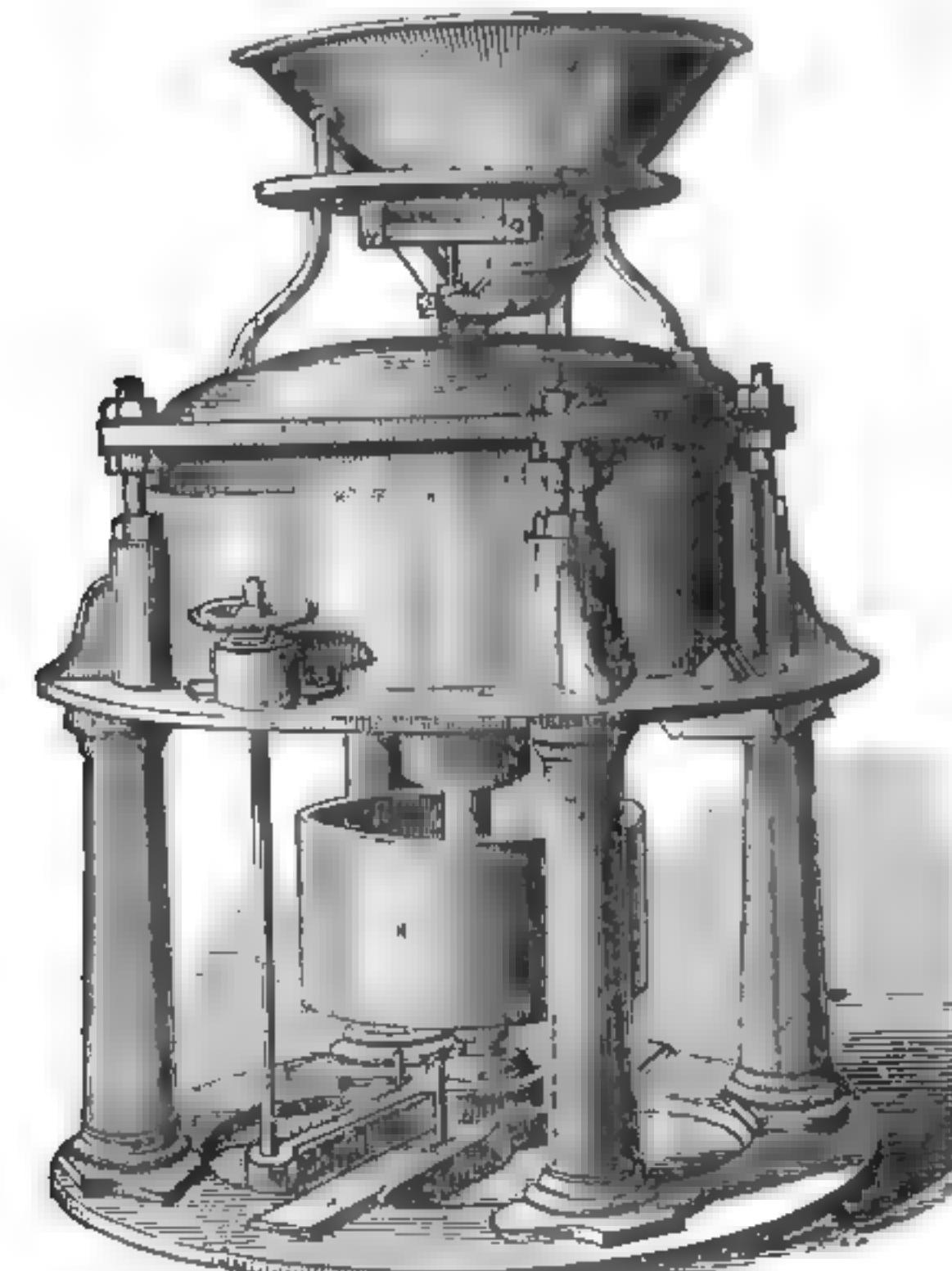


SEND FOR CATALOGUE.

ARMITAGE, HERSCHELL & CO.

Tonawanda, N. Y.

WHEN WRITING TO ADVERTISERS PLEASE MENTION "THE MILLING WORLD."

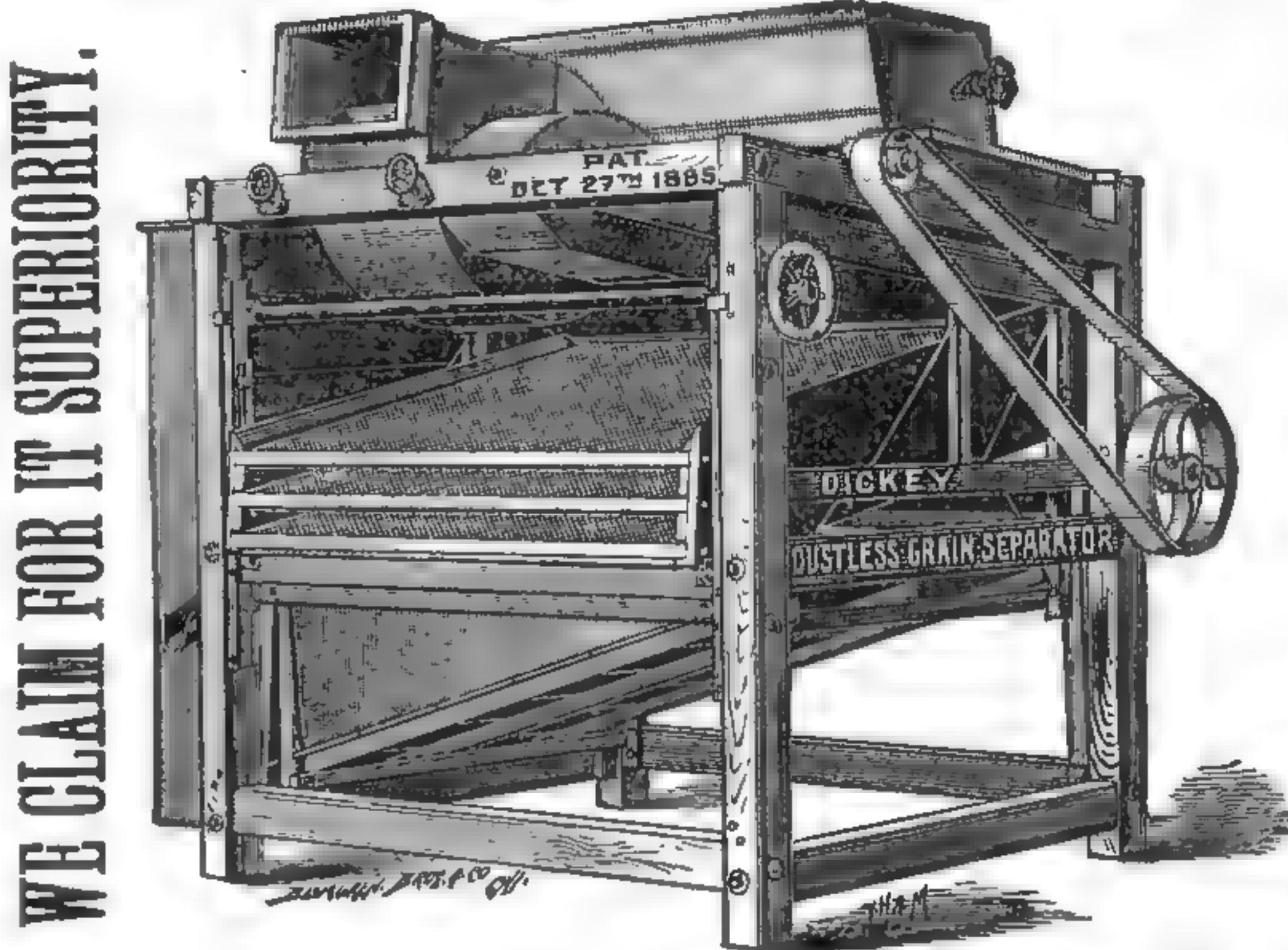


L. L. WHITLOCK,
Advertising Agent
FOR MANUFACTURERS.
TRADE JOURNALS A SPECIALTY.
P. O. DRAWER 5323. Boston, Mass.

As Agent for Advertisers instead of Papers, I obtain the Best Rates Possible for my Customers.

DICKEY DUSTLESS
GRAIN AND FLAX SEPARATOR

This Separator is our latest and most perfect, and guaranteed to be the superior of any now on the market. This machine, as can be seen by the cut, is not a warehouse fanning mill with one patent attachment, but is a Dustless Separator, made for the express purpose of thoroughly cleaning and separating all kinds of grain in large quantities; its construction is such that the working machinery and weight is all within the parts or anchors.



WE CLAIM FOR IT SUPERIORITY.

We claim for it Superiority over everything of the kind made, in simpleness, durability, saving of power, capacity and cost of construction. Its height will accommodate any number of spouts from different points, without moving machine. They have a capacity from 700 to 1,500 bushels per hour. We also control exclusively the manufacture of the celebrated Dickey Giant, End and Side Shake, Warehouse Mills, that have attained such a world-wide reputation. Sent on approval to any reliable party. For full particulars address,

A. P. Dickey Manufacturing Co. Successors to Dickey & Pease RACINE, WIS.

MUNSON BROS., UTICA, N. Y.,

—MANUFACTURERS OF—

PORTABLE MILLS
FOR CORN AND FEED GRINDING,
WITH
FRENCH BUHR and ESOPUS STONES

Shafting, Pulleys, Hangers, Etc., and General Mill Furnishings.

SEND FOR CATALOGUE AND PRICE LIST.



WHEN YOU WANT
WIRE CLOTH
SEND TO
Brooklyn Wire Cloth Works,
107 JOHN STREET, NEW YORK.

EUROPEAN ECHOES.

IN Kent, England, a farm of 500 acres that has been let hitherto for \$6,000 per year has just been re-let to the same tenant for \$2,500. This is said to be a fair illustration of the decline of farm values in England of late years.

THE Belgian Consul at Nagasaki, Japan, reports that samples of Japanese wheat were not long ago sent to England to be analyzed, and that the reports of chemists and millers established their good quality. First-class flour was made from them, and the result has been the formation of a flour-milling company at Nagasaki. Another establishment of the same kind is on the point of being started with the latest European appliances.

THE following shows the imports of cereal produce into the United Kingdom during the first twenty-four weeks of the season compared with previous seasons:

	IMPORTS.			
	1889-90.	1888-9.	1887-8.	1886-7.
	cwt.	cwt.	cwt.	cwt.
Wheat.....	26,138,031	29,520,423	23,226,489	23,656,026
Barley.....	9,045,330	10,725,427	9,686,316	10,322,374
Oats.....	6,574,113	8,351,111	8,399,124	7,236,886
Peas.....	888,023	1,020,059	1,751,014	1,167,506
Beans.....	1,654,219	1,389,974	1,262,491	1,200,327
Indian corn.....	13,867,633	11,696,508	10,770,300	12,183,302
Flour.....	7,998,231	7,148,539	8,967,065	8,671,033

IT is rumored in England that in consequence of the complaints respecting the quality of some of the bread supplied to the army that have been so frequent of late years, the War Office has decided to erect, at various military centers, bakehouses capable of a large outturn. The first of these military bakeries will, it is said, be shortly erected at Woolwich, the architect's design having been presented and passed. It is also alleged that bread-making machinery of the latests model will form part of the equipment of the garrison bakehouses, a statement which appears highly probable in view of the large scale on which such bakeries would be worked.

AGRICULTURE in Great Britain has got into severe straits, and it seems to be growing gradually more and more depressed. Wheat-growing has declined very largely, as may be seen in the following summary of population, area under wheat, and the amount of grain available for consumption in the United Kingdom, from home-grown produce, and from imports, in four periods of eight years each:

Periods.	Population.	Area under Wheat.	Available for Consumption—			
			Home Produce.	From Imports.		
p. ct.	p. ct.	p. ct.	p. ct.	p. ct.		
1852-59...	28,067,170	4,092,160	73.5	3.74	26.5	1.82
1861-67...	29,806,442	3,753,011	59.7	3.30	40.3	2.19
1868-75...	31,787,143	3,788,181	52.5	2.94	47.5	2.63
1876-83...	34,603,528	3,091,810	85.7	2.03	64.8	3.84

THE London "Miller" of March 2 sums up the wheat outlook as follows: In France wheat has advanced 6d. per quarter on the week, and flour 3d. per sack. Rye is firm and unchanged. In Germany wheat is 6d. dearer on the week, with a good sale. Rye is unaltered. In Austria-Hungary wheat is rather cheaper, owing to heavier threshings and deliveries from farmers. In Spain and Portugal inquiry for wheat is not being fully met by home production, and the demand for imports is consequently growing. In Italy the autumn-sown wheat looks well, but stocks of 1889 corn are getting low, and considerable imports will be necessary before July. In Russia the autumn-sown wheat is of very indifferent promise, and holders of 1889 corn are increasing their demands. The latest news from India is of a rather poor wheat yield and of restricted shipments of the old crop. From South America, on the other hand, comes intelligence of a good yield of fine wheat in the Argentine Republic.

POINTS IN MILLING.

MANY millers are unable to smell even the strongest and most pungent odors. One can get a good idea of the effect of mill-air on the average millers' nose by subjecting some of his miller acquaintances to tests for nose-power. I find that the majority of millers, after long service in the dust-laden atmosphere, become incapable of detecting or distin-

guishing odors. They are men who have lost one of their senses, the important one of smelling.

THE continued inhalation of particles of flour at last ends in a condition of the membranes of the nose that puts an end to the enjoyment of scents and the repulsion of stenches. During the recent cold snap I was in one mill whose owner is color-blind, and nose-blind as well. The day was cold, and the mill was closed tightly at every door and window, and the stoves were kept at a red heat. When I entered the mill the stench was so pronounced that it nearly knocked me down. It was a mingled stench, of half-burned air, of sour flour, of general foxiness and frouziness, of uncleanness and impurity irremediable. The owner was sublimely unconscious of the acid razor-edge of the air he was breathing, and the few employes were evidently "used to it," so nothing was seen or heard in the way of "kicking."

THE owner and myself drew up chairs in one corner, by a red-hot stove, and began to talk business. To test his olfactory deadness, I broke a tooth from a rubber comb and dropped it on the hottest spot on the stove. The horrible flavor only added a new horror to the atmospheric horrors already existing in that mill, and I was the only one in the place who suffered through the fumes of the burned rubber. That old owner never noticed it. It nearly killed me.

WHAT is the value of the "dead nose" in a miller? The sense of smell, properly trained and applied, may serve a useful purpose in detecting musty, foxy, fetid, frouzy flour, in ferreting out deposits of dirt, and in judging of the quality of flour dough, and bread.

THE miller is in constant danger of contracting the unsmelling nose. Even the cat and the dog that loaf around the mill, roasting their hides day after day by the hot stove, and breathing the dusty air, lose the keenness of their scent. They become as dead-nosed as the millers, and they have to be guided by their eyes rather than by their noses in hunting for prey. Mill-air is nose-destroying air. When the miller begins to notice his loss of smelling, he may begin to expect the "miller's cough" to present itself.

THE miller who has the sense of smell, who knows its value, and who wishes to keep it intact, should take precautions from the start. It is the dust that makes the trouble, ending in catarrh and bronchitis. He can not well avoid breathing dust, but he can, when he leaves the mill, cleanse his nasal passages by a simple snuffing process, using a weak warm salt water as a douche. That will remove the irritating particles of dust and allow the membranes to get into a somewhat natural condition before he enters the mill again. If he leaves the irritants in the passage, he must expect them to go right on irritating him just as long as they remain.

THE miller may well dread the arrival of the day when burned onion, burned asafoetida, burned rubber, attar of rose and heliotrope shall "all smell alike" to him. Color-blindness is bad, very bad, in a miller, but it's a toss of a copper between color-blindness and dead-noseness. The miller needs to use a nasal flue-cleaner regularly, and, if he has an intelligent idea of the value of an active nose, he will do so.

CATARRH.

CATARRHAL DEAFNESS—HAY FEVER.

A NEW HOME TREATMENT.

Sufferers are not generally aware that these diseases are contagious, or that they are due to the presence of living parasites in the lining membrane of the nose and eustachian tubes. Microscopic research, however, has proved this to be a fact, and the result of this discovery is that a simple remedy has been formulated whereby catarrh, catarrhal deafness and hay fever are permanently cured in from one to three simple applications made at home by the patient once in two weeks.

N. B.—This treatment is not a snuff or an ointment; both have been discarded by reputable physicians as injurious. A pamphlet explaining this new treatment is sent free on receipt of stamp to pay postage, by A. H. Dixon & Son, 337 and 339 West King street, Toronto, Canada.—*Christian Advocate*.

Sufferers from Catarrhal troubles should carefully read the above.

COMPOUND Condensing or Non-Condensing. 16 SIZES, 5 to 500 H. P. Not yet equaled by any form of Engine for **HIGH FUEL DUTY AND SIMPLICITY.**

STANDARD 13 Sizes in Stock. 5 to 250 H. P. 3000 in use in all parts of the Civilized World.

JUNIOR 6 Sizes in Stock, 5 to 50 H. P. An Automatic Engine cheaper than a Slide Valve. WELL BUILT. ECONOMICAL. RELIABLE. Over 300 Sold the First Year. All the above built strictly to Gauge with INTERCHANGEABLE PARTS. REPAIRS CARRIED IN STOCK. SEND FOR ILLUSTRATED CATALOGUES.

WESTINGHOUSE **ENGINES**

The Westinghouse Machine Co.
PITTSBURGH, PA. U.S.A.

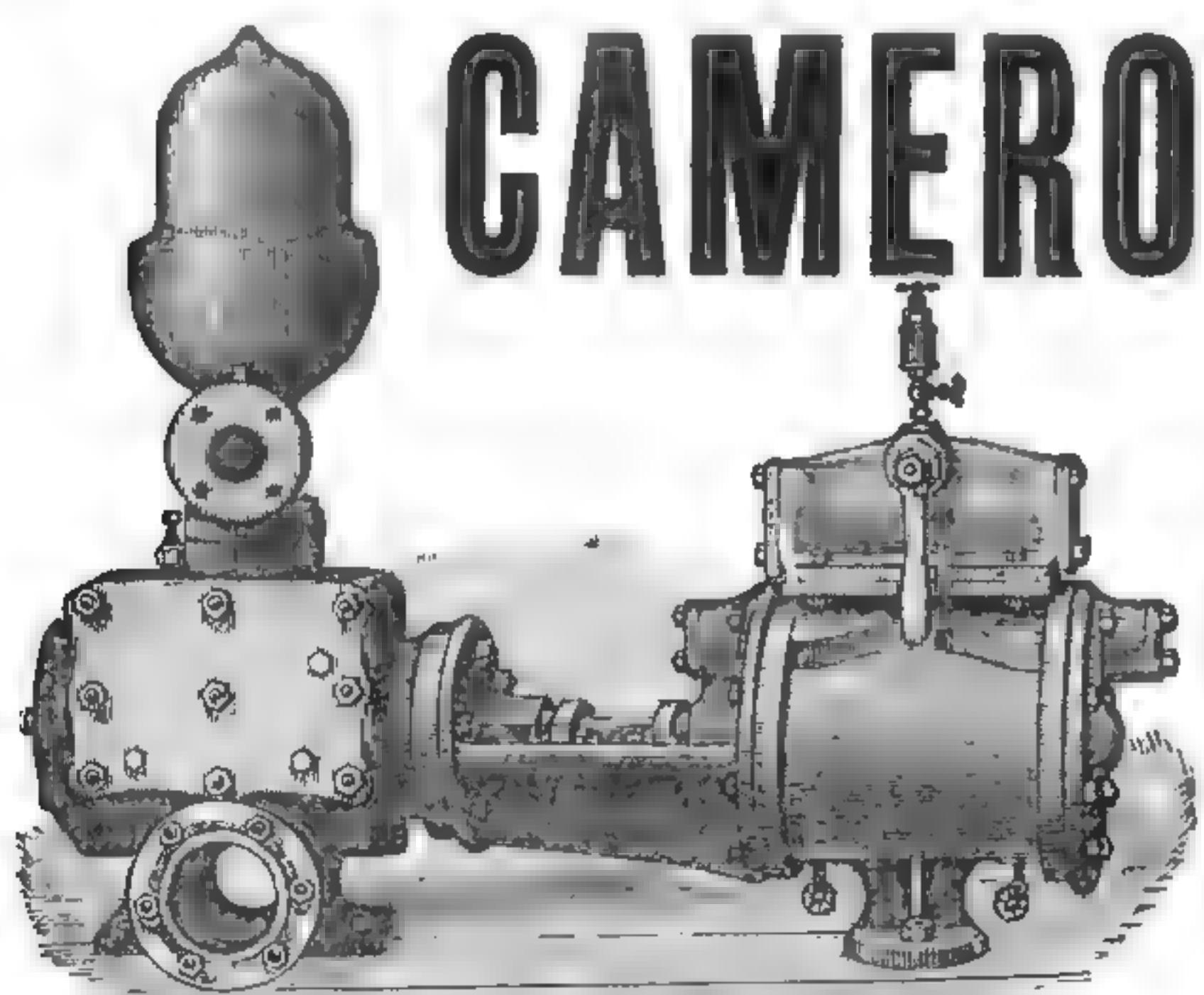
SELLING DEPARTMENT IN THE UNITED STATES.

New York, 17 Cortlandt St. Westinghouse, Boston, Hathaway Building, Pittsburgh, Westinghouse Build'g, Chicago, 156, 158 Lake St. & Co. Philadelphia, 608 Chestnut St. M. R. Muckle, Jr. & Co.

17 Cortlandt St. Westinghouse, Boston, Hathaway Building, Pittsburgh, Westinghouse Build'g, Chicago, 156, 158 Lake St. & Co. Philadelphia, 608 Chestnut St. M. R. Muckle, Jr. & Co.

ST. LOUIS, 511 NORTH FOURTH ST., Westinghouse, Church, Kerr & Co.

Salt Lake City, 259 S. Main St. { Utah & Montana Butte, Mont. { Granite St. { Machinery Co. San Francisco, 21, 23 Fremont Street, Parke & Lacy Co. Portland, Or. 33, 35 N. Front St. Parke & Lacy Mch. Co. Charlotte, N. C. 36 College St. Atlanta, Ga. 45 S. Prior St. { The D. A. Tompkins Co. Dallas, Tex. Keating Imp. & Machine Co. Chattanooga, Tenn. C. E. James & Co.



CAMERON STEAM PUMP

THE STANDARD OF EXCELLENCE.

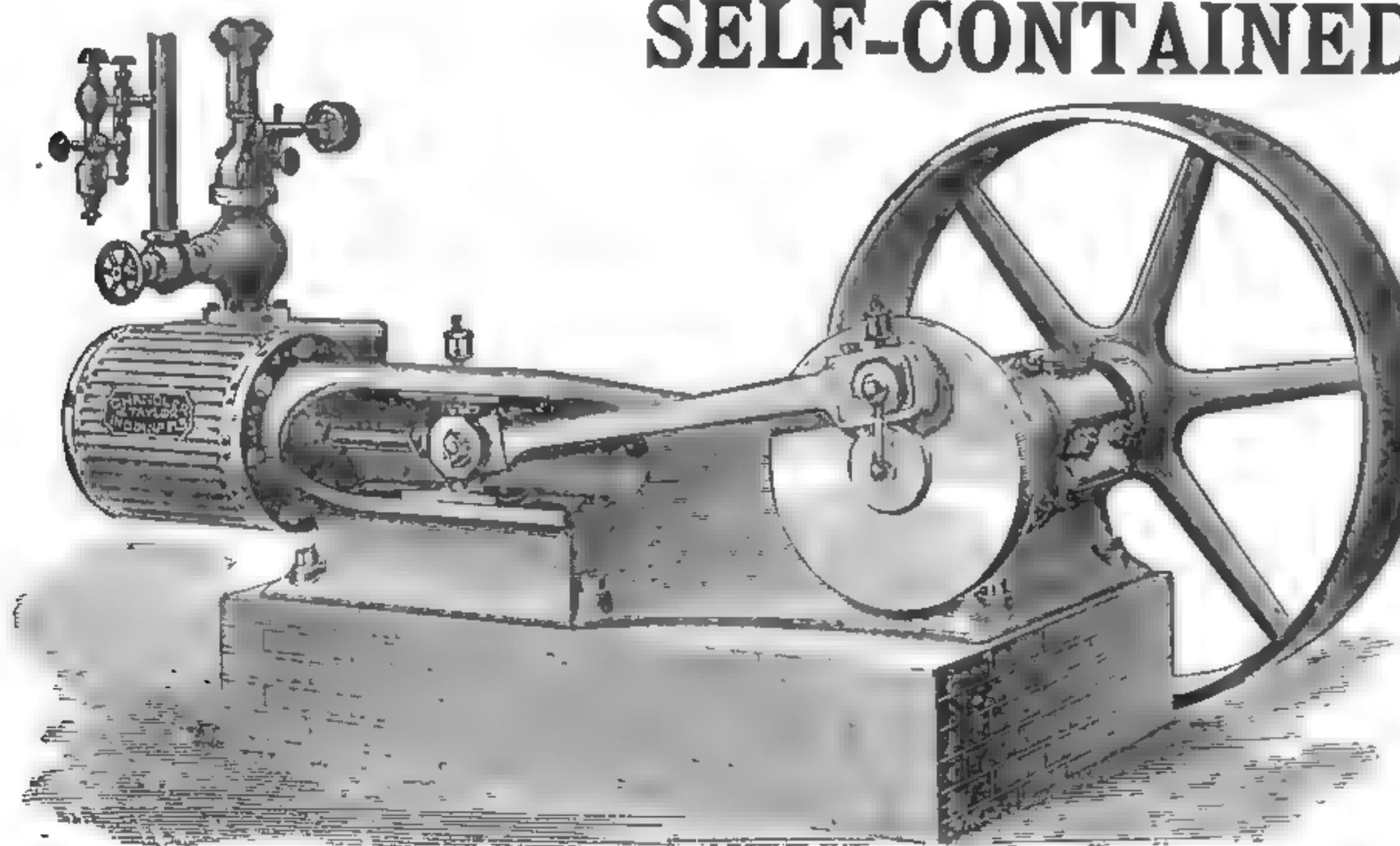
SIMPLE! COMPACT! DURABLE!
"NO OUTSIDE VALVE GEAR."

Steam, Air & Vacuum Pumps in Every Variety

FOR ILLUSTRATED CATALOGUE ADDRESS

THE A.S. CAMERON STEAM PUMP WORKS

Foot of East 28d Street. - New York.



SELF-CONTAINED STEAM ENGINES

Stationary or
Semi-Portable.

High Standard Maintained.
Prices Greatly Reduced.

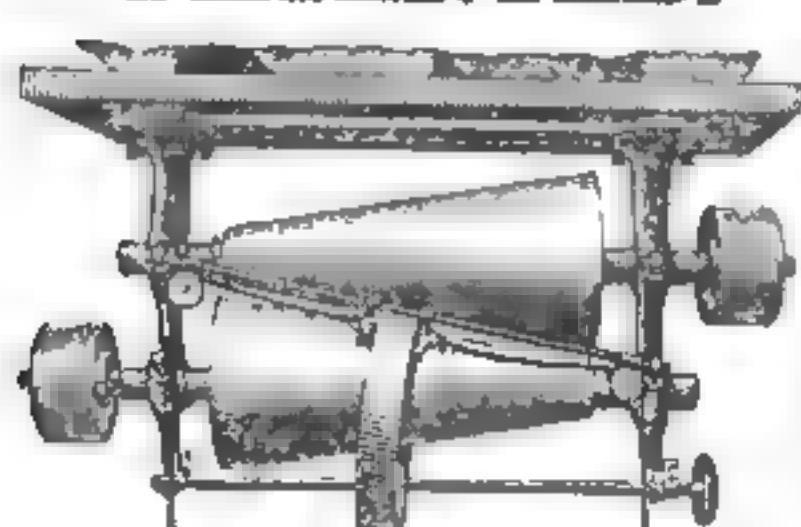
WRITE FOR NEW ILLUSTRATED
CATALOGUE NO. 32.

Chandler & Taylor Co.
Indianapolis, Ind.

Engines, Saw-Mills and Drain The
Machinery a Specialty.

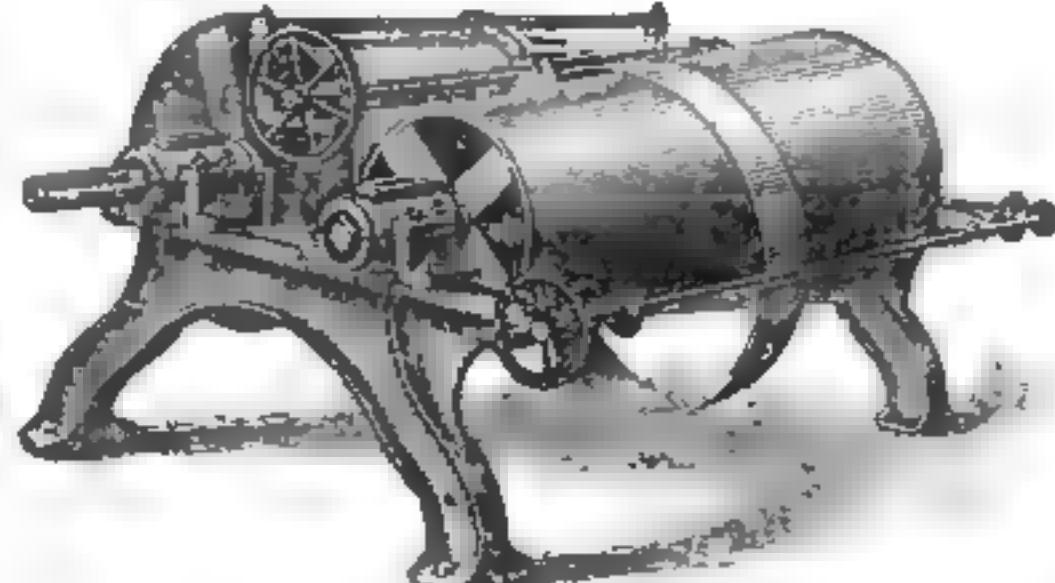
THE EVANS FRICTION CONE & FRICTIONAL GEARING

"PATENTED."



This cut represents a set of hanging cone pulleys. This pattern is intended for that class of machinery that stops and starts at the same speed, and at the same time be able to change the speed more or less while running. These cones are also fitted with a governor where a steady motion is required and the initial power is

ng. All sizes made from $\frac{1}{2}$ Horse Power to 50 Horse Power. SEND FOR ILLUSTRATED CATALOGUE.



EVANS FRICTION CONE CO., 85 Water St., BOSTON.





RELIANCE OIL & GREASE CO., CLEVELAND, O..

—MANUFACTURERS OF—

Finest Lubricants for Milling Plants. A Challenge to the World.

WRITE US.

"VALVE OLEINE"—675 Degrees Fire Test, Cylinder Oil. "RUSSIAN"—Engine and Machine Oil.

"CHIEF"—Roller Mill Lubricant.

"NIAGARA"—Belt Grease.

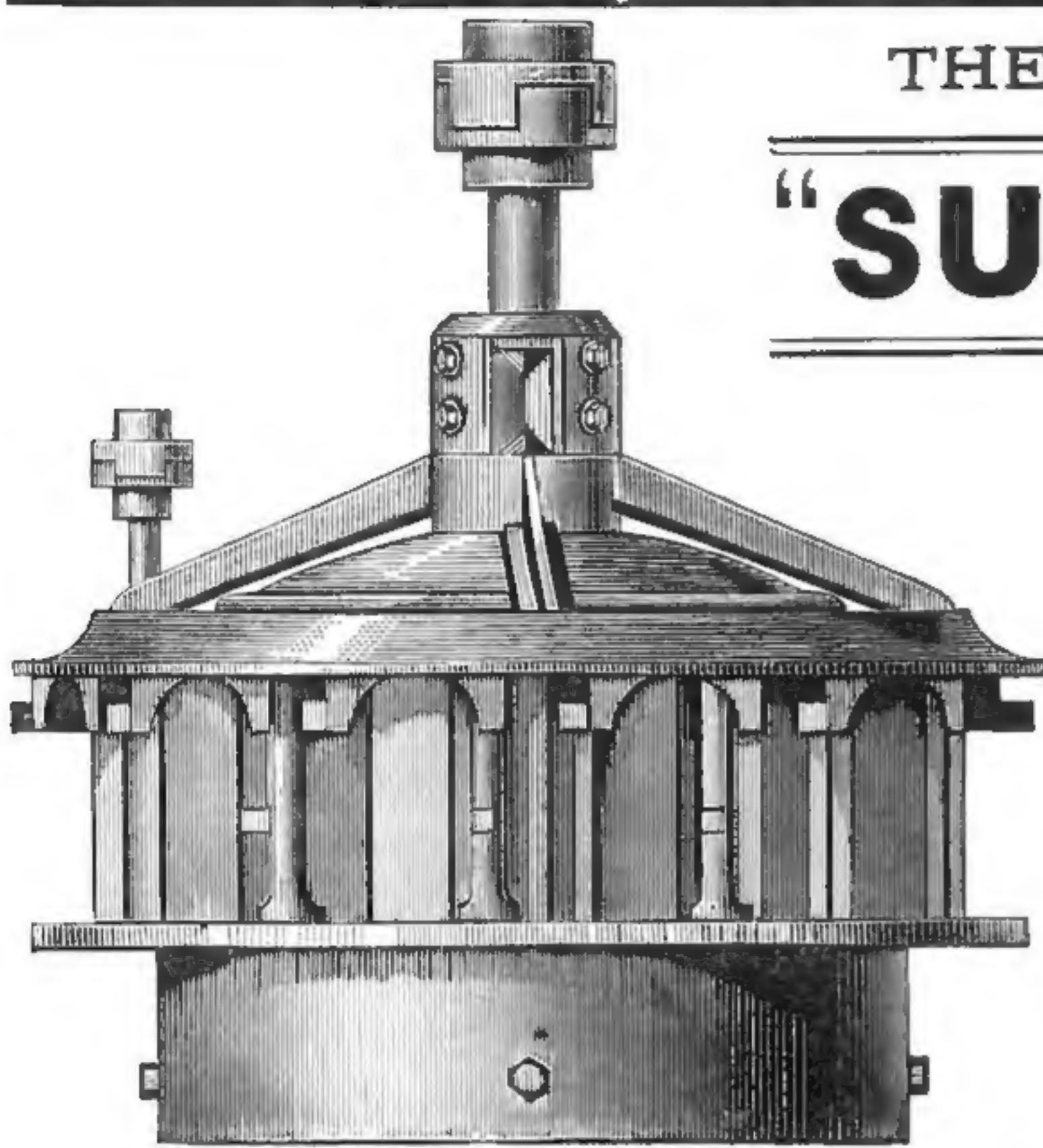
"ANCHOR"—Roller Mill Grease.

"CHELSEA"—Scale Solvent, Best on Market.

**SPECIAL
HIGH GRADE
PRODUCTS**

Agents Wanted.

FREE—SAMPLES, CATALOGUE, AND ALL INFORMATION.



THE IMPROVED

"SUCCESS"

PERCENTAGE:

Full Gate, - -	86.29
½ Gate, - - -	86.07
¾ Gate, - - -	81.90

—(0:)—

This Wheel Is Both Durable and Cheap. Send for Pamphlet to

S. MORGAN SMITH
YORK, - PA.

—SAMPLE OF.—

C. O. BARTLETT'S PRICES

FOR STEEL ELEVATOR BUCKETS AND BELTING.

BELTING.

STEEL ELEVATOR BUCKETS.	LEATHER.	RUBBER.	COTTON.
SIZE.	PRICE.	SIZE.	PRICE.
3x8	4c	4 inch	20c
4x8	6c	5 "	25c
5x4	9c	6 "	32c
6x4	13c	8 "	40c
8x6	18c	10 "	52c

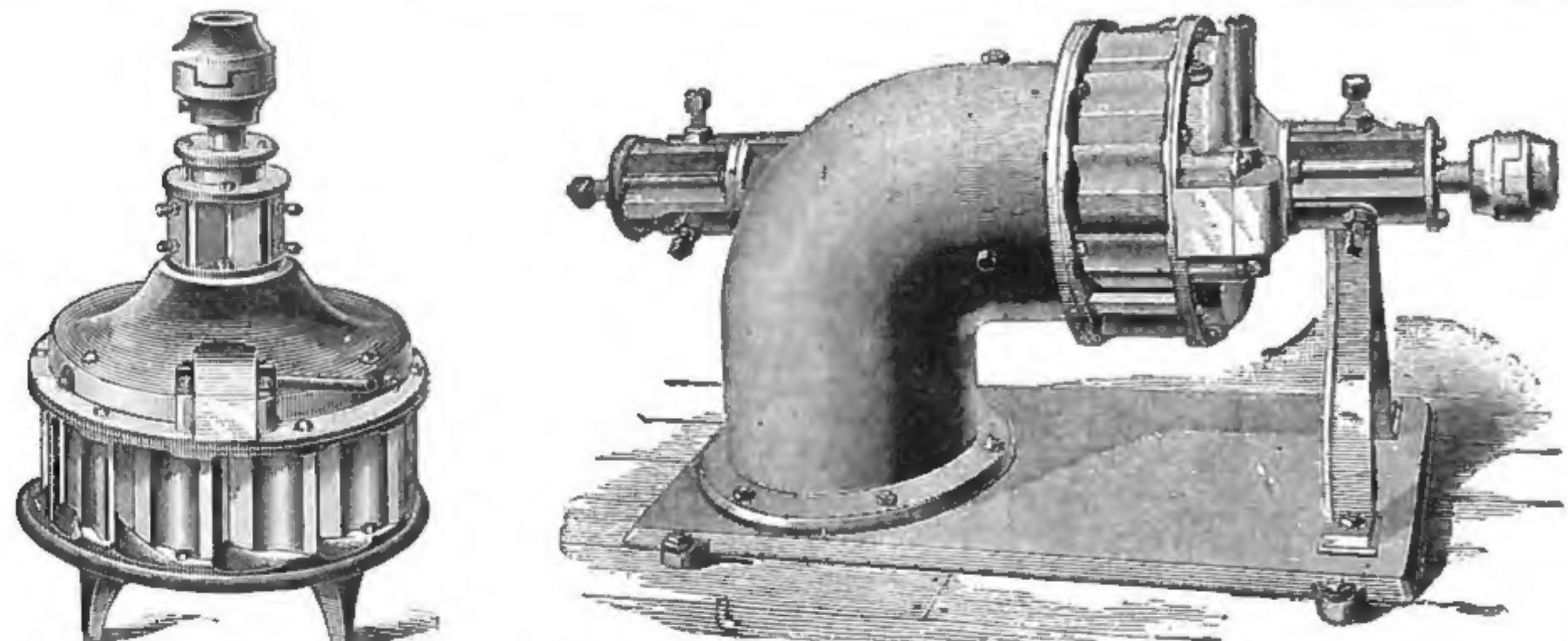
SIZE.	PRICE.	SIZE.	PRICE.	SIZE.	PRICE.
4 inch	18c	5 "	17c	5 "	7c
5 "	20c	6 "	28c	6 "	10c
6 "	36c	8 "	18c	8 "	13c
8 "	16c	10 "	10c	10 "	16c

C. O. BARTLETT, CLEVELAND, OHIO.

WHEN WRITING TO ADVERTISERS

PLEASE MENTION

THE MILLING WORLD.



**BURNHAMS NEW IMPROVED
STANDARD TURBINE WHEEL,
ON VERTICAL OR HORIZONTAL SHAFT.**

IT WILL PAY INTERESTED PERSONS TO INVESTIGATE THE MERITS OF THIS WHEEL BEFORE PLACING THEIR ORDER. SEND FOR NEW CATALOGUE.

BURNHAM BROS., YORK, PA.

"Cooper on Belting"

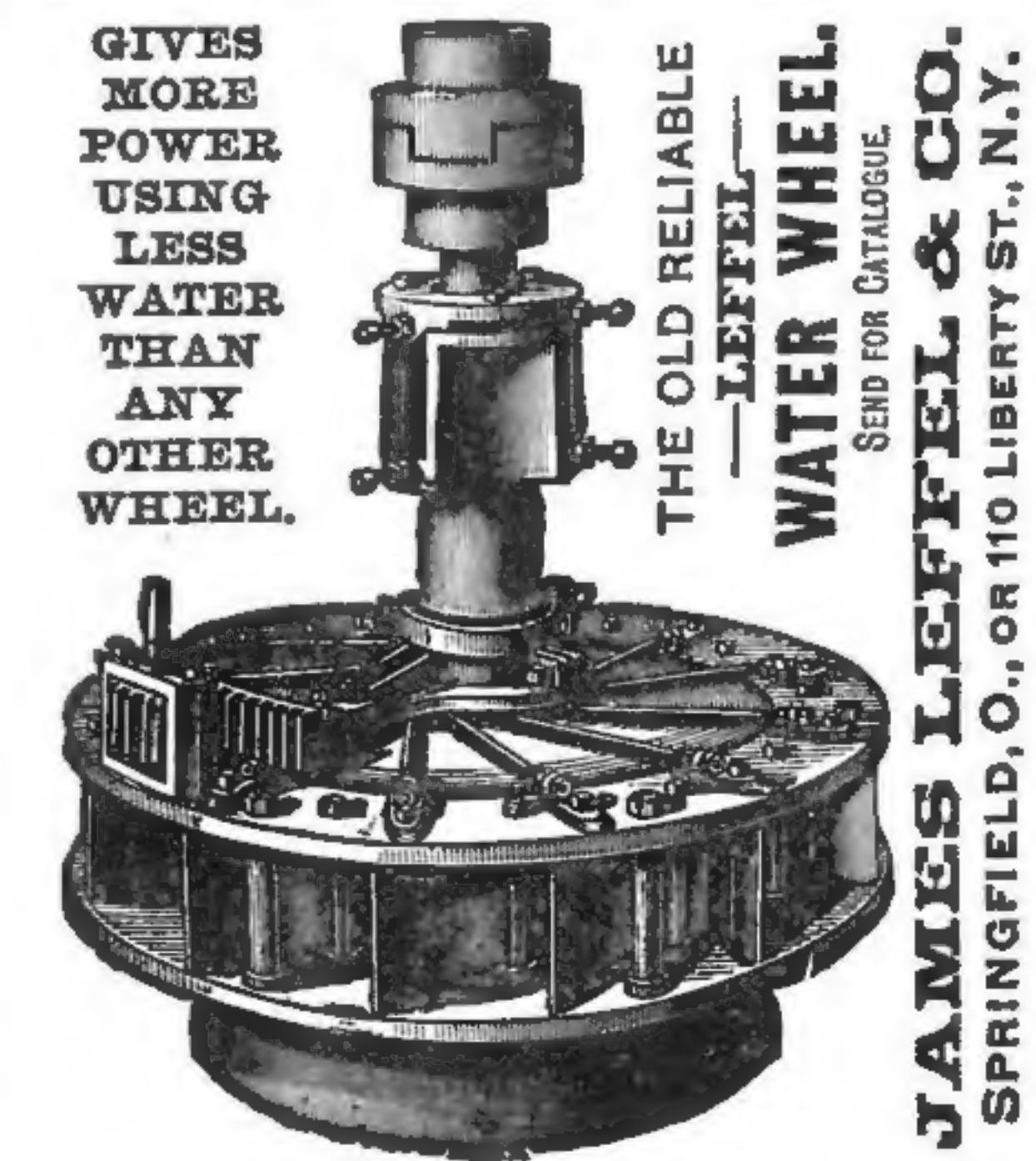
A Treatise on the Use of Belting for the Transmission of Power. With illustrations of approved and actual methods of arranging Main Driving and Quarter Twist Belts, and of Belt Fastenings. Examples and Rules in great number for exhibiting and calculating the size and driving power of belts. Plain, Particular and Practical Directions for the Treatment, Care and Management of Belts. Descriptions of many varieties of Beltings, together with chapters on the Transmission of Power by Ropes; by Iron and Wood Frictional Gearing; on the Strength of Belting Leather; and on the Experimental Investigations of Morin, Briggs, and others, for determining the Friction of Belts under different tensions, which are presented clearly and fully, with the text and tables unabridged. By JOHN H. COOPER, M. E. Second Edition. One vol., dem' octavo. Cloth, \$3.50. Sent post-paid on receipt of price. Address,

McFAUL & NOLAN, BUFFALO, N. Y.



THIS WHEEL GIVES HIGH RESULTS, AND IS ACKNOWLEDGED THE BEST, MOST PRACTICAL AND EFFICIENT TURBINE MADE. FOR SIMPLICITY, DURABILITY, AND TIGHTNESS OF GATE IT HAS NO EQUAL.

State requirements and send for Catalogue to
T. C. ALCOTT & SON,
MOUNT HOLLY, N. J.



GIVES
MORE
POWER
USING
LESS
WATER
THAN
ANY
OTHER
WHEEL.
THE OLD RELIABLE
—LEFFEL—
WATER WHEEL.
SEND FOR CATALOGUE.

JAMES LEFFEL & CO.
SPRINGFIELD, O., OR 110 LIBERTY ST., N.Y.

PAYNE HIGH SPEED CORLISS ENGINE

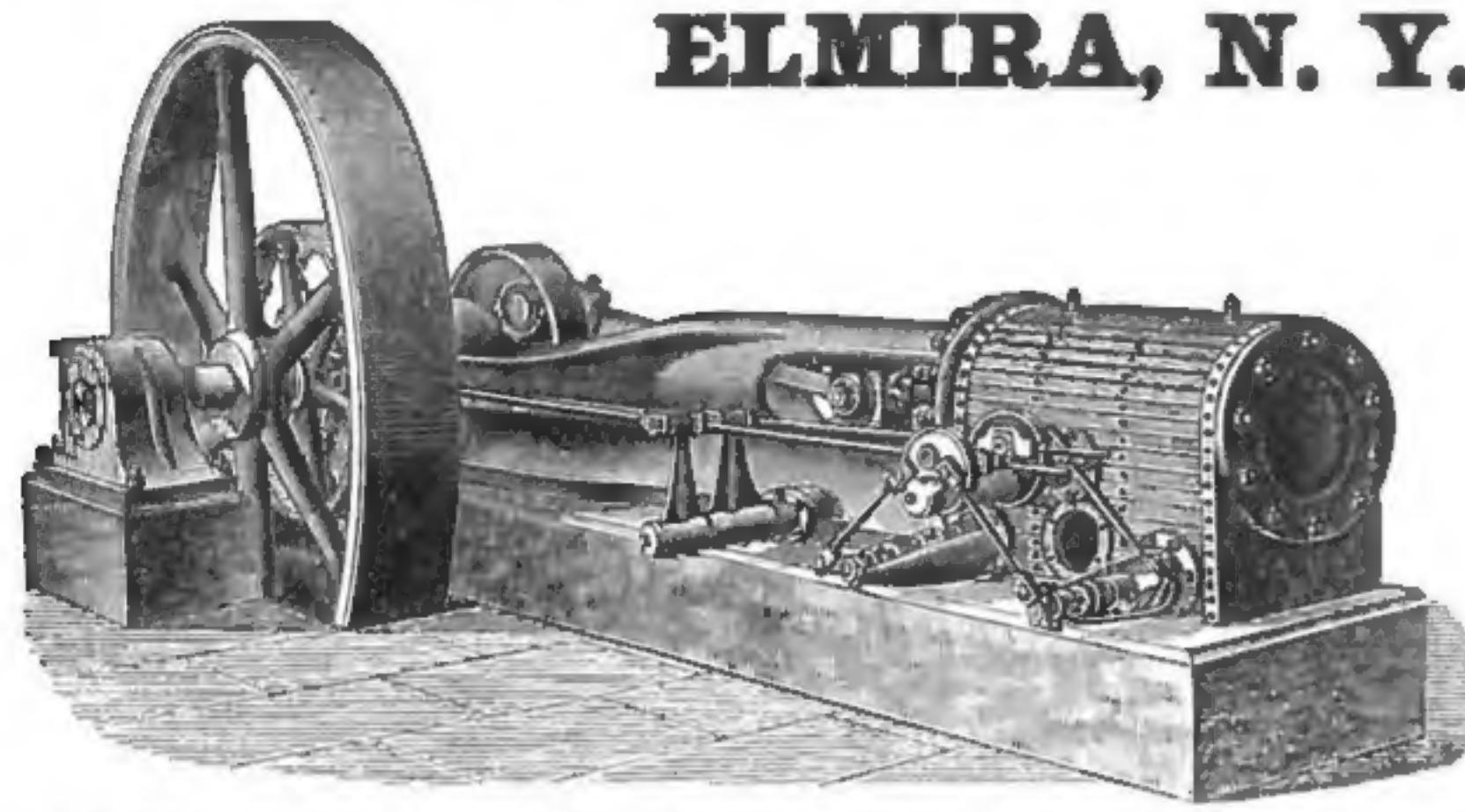
SHAFT GOVERNOR COMBINED WITH CORLISS WRIST-PLATE.

ECONOMY OF FUEL.

REGULATION EQUAL TO ANYTHING IN USE.

B. W. Payne & Sons,

ELMIRA, N. Y.



10 S. Canal Street.

CHICAGO, ILL.

45 Dey Street

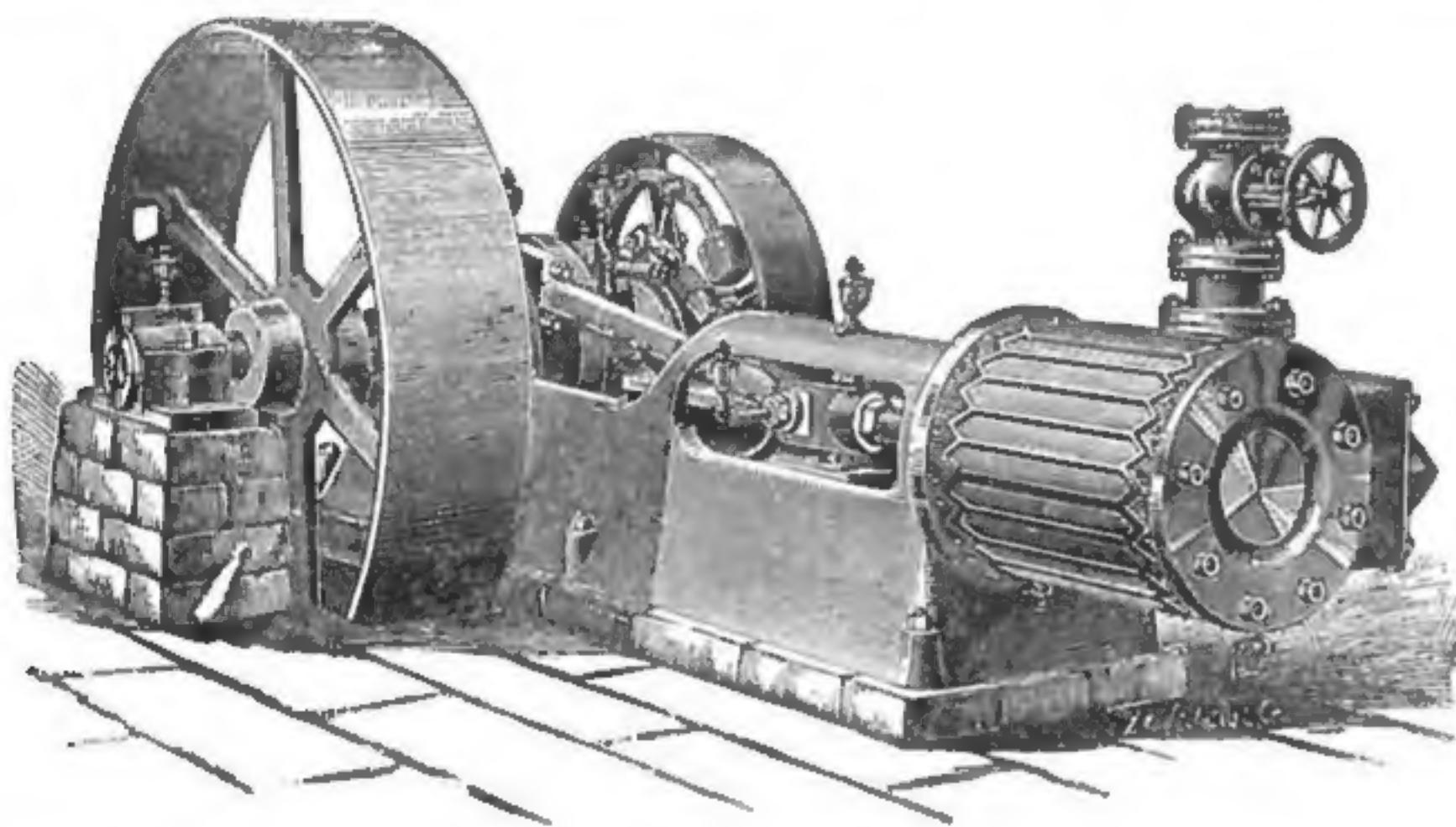
NEW YORK.

Hill, Clark & Co.

BOSTON, MASS.

AUTOMATIC ENGINES FROM 2 TO 200 HORSE POWER.

Economic Power Plants



Especially Adapted to Electric Lighting and

WOOD-WORKING ESTABLISHMENTS

MANUFACTURED BY

VALLEY IRON WORKS, WILLIAMSPORT, PENN.

Please Send for Our New Catalogue and Mention "The Milling World."



BRANCH HOUSE, 1425 EAST MAIN STREET, RICHMOND, VA.



KEEP YOUR BELTS FROM SLIPPING

And Save Your Power by Using FRICTION COVERING for Pulleys. Agents Wanted. Satisfaction Guaranteed. Easily Applied. No Rivets. Effective.

NATIONAL PULLEY COVERING CO., BALTIMORE, MD.

Lloyd & Sterrett

COR. 16TH AND STATE STREETS,

ERIE, - - PENN.

LLOYD & STERRETT

ENGINES AND BOILERS,

ERIE. - - - - -

THIS SPACE BELONGS TO

Lloyd & Sterrett

COR. 16TH AND STATE STS.,

ERIE - - PENN.

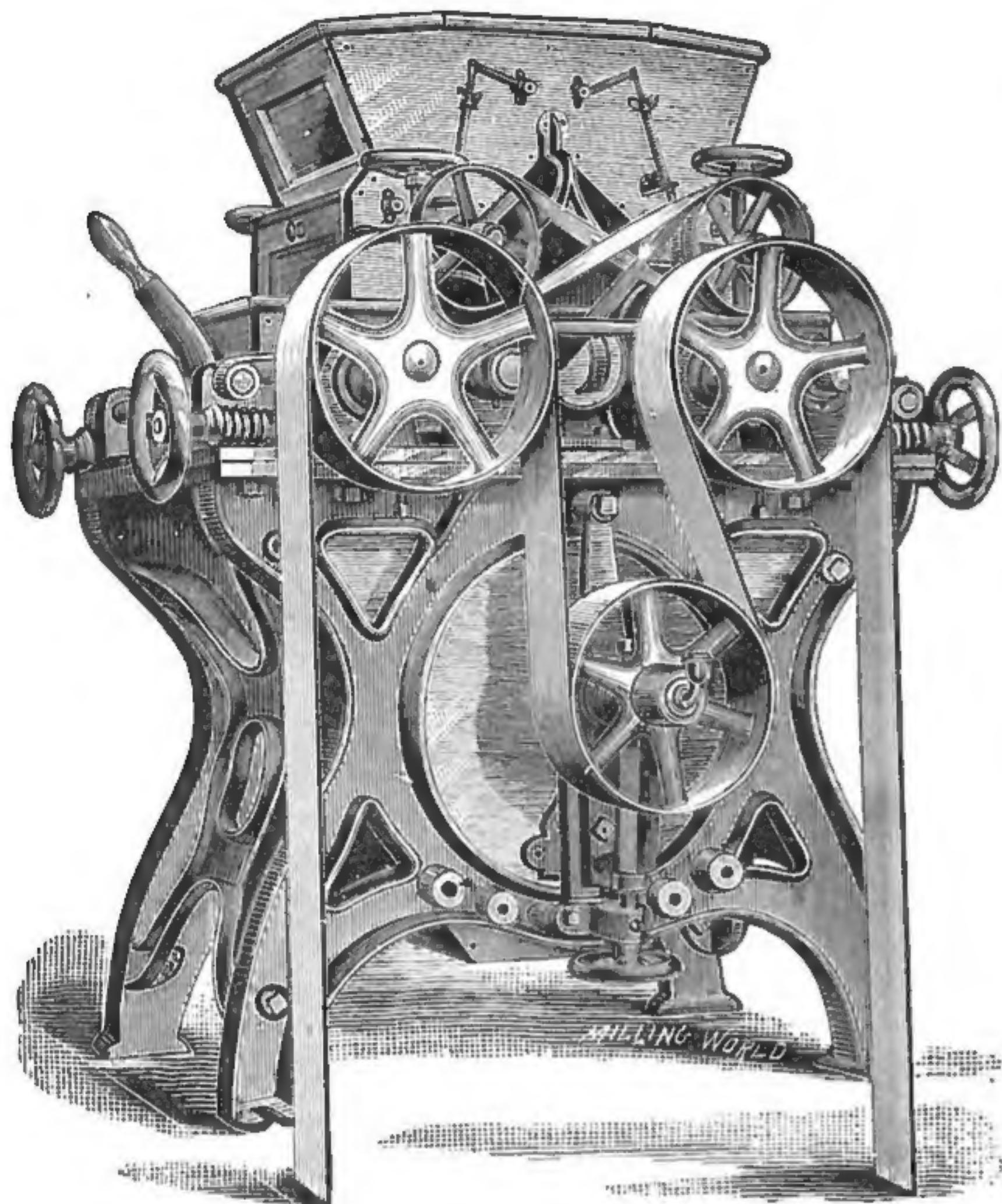
MOORE'S
PATENT



BARREL HEATER.
For all
kinds of coop-
erage. Thousands
in use in all parts of the
U. S. Send for Circular.

JOLIET STOVE WORKS. JOLIET ILL.

JOHN HUTCHISON MFG. CO., Mill Builders and Mill Furnishers.



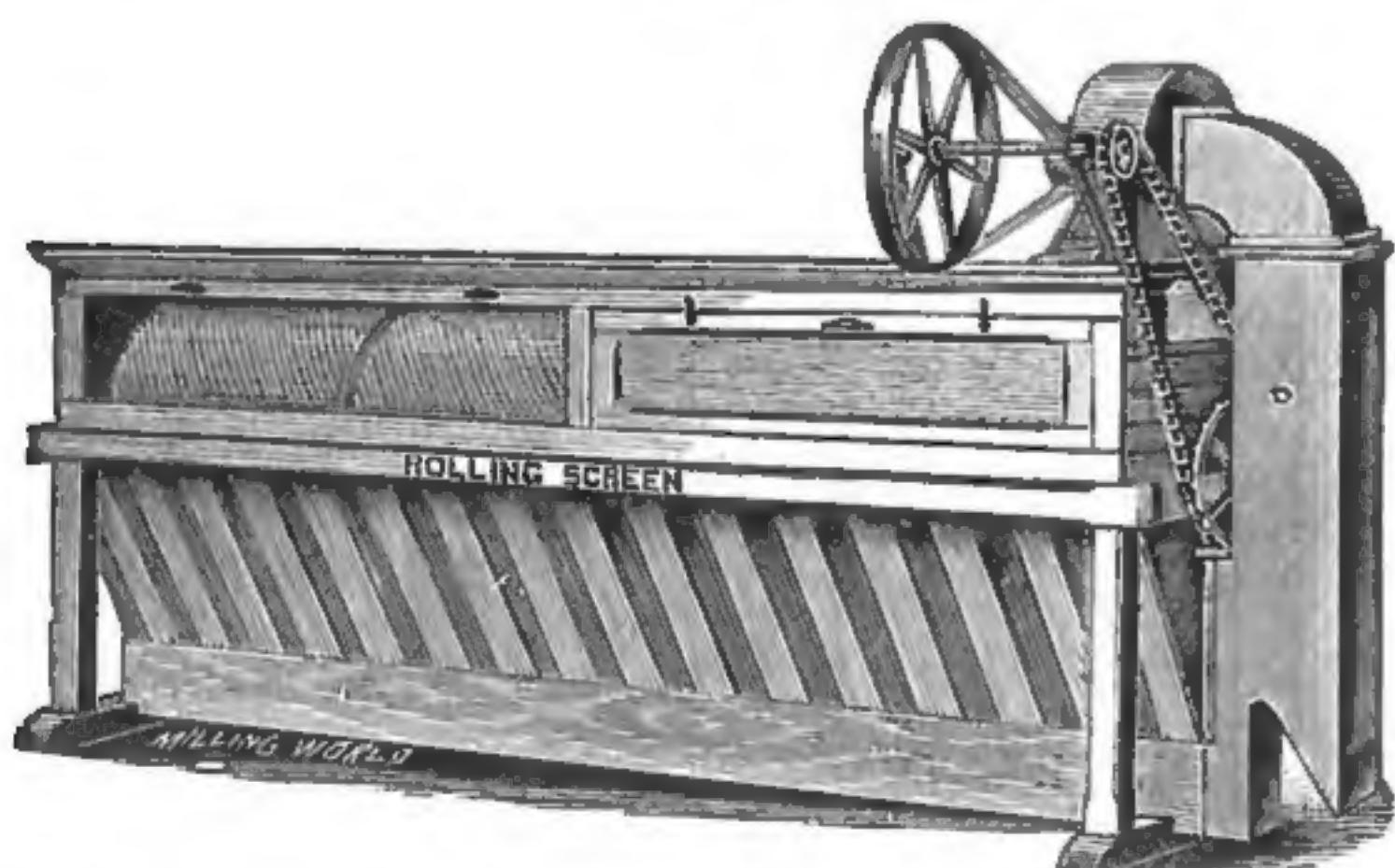
"The Rickerson." The original six inch 4 Roller Mill. We now own the patents on this mill and after greatly improving the mill manufacture them in four sizes:

6x12 inch.

6x18 inch.

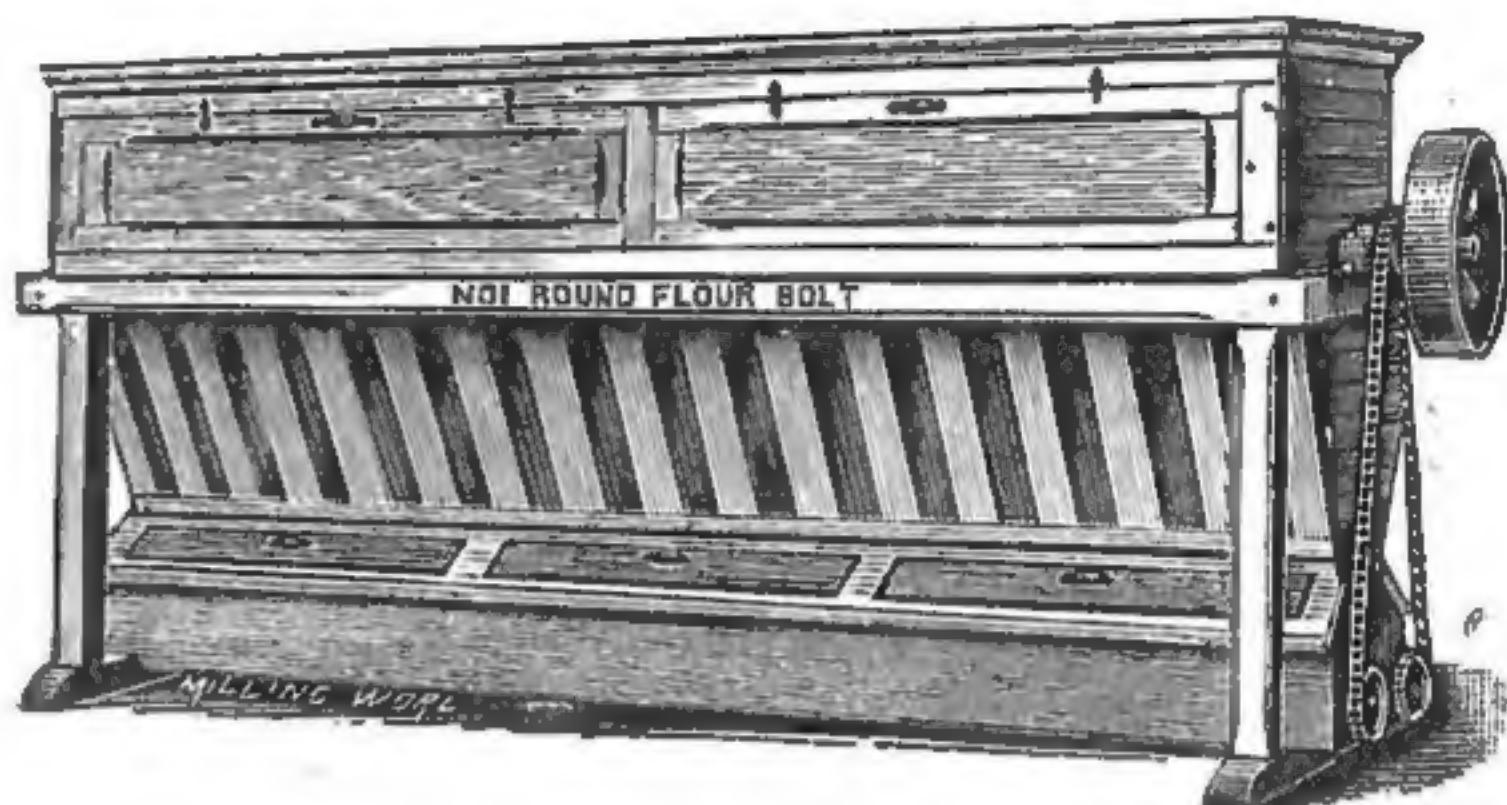
6x15 "

6x20 "

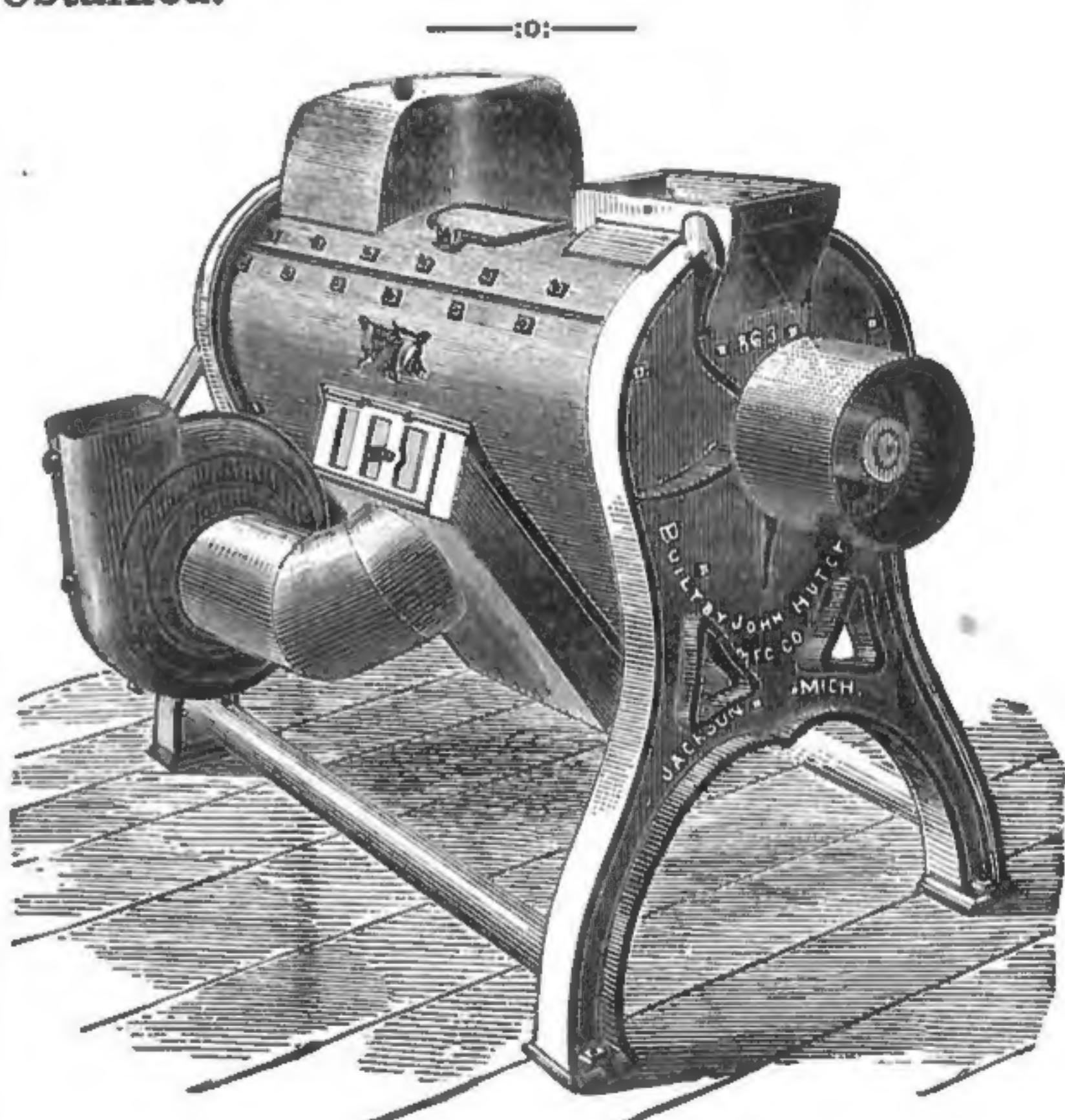


The above cut represents our New Rolling Screen, which is absolutely dustless and has as much scouring qualities as any two scouring machines now being made.

Send for Estimates for Our Full Roller Mills of any Capacity.



The above cut shows our New Round Slow Running Flour Bolt. We also build a Cylinder or Round Scalping Reel and we have lately built a number of new mills of medium capacity, using our Roller Mills, our Round Flour Bolts and Scalping Reels, getting better results than is usually obtained.



Hutchison's New Dustless Iron Corn Sheller, especially adapted for Mill and Elevator use.

—:ADDRESS ALL CORRESPONDENCE TO:—

John Hutchison Mfg. Co.
JACKSON. · · · MICHIGAN.



ELEVATOR BUCKET.

CORRUGATIONS

What we know of corrugations can be found out by writing to US, or H. W. Caldwell, Chicago, Ill.

Stamping and Pressing of Sheet Metals for all Classes of Work. Also Tinning, Galvanizing and Japanning.

THE AVERY STAMPING CO.,

Cleveland, Ohio, U. S. A.

New York Office, 51 Cliff Street, HALL & NEAR, Agents.



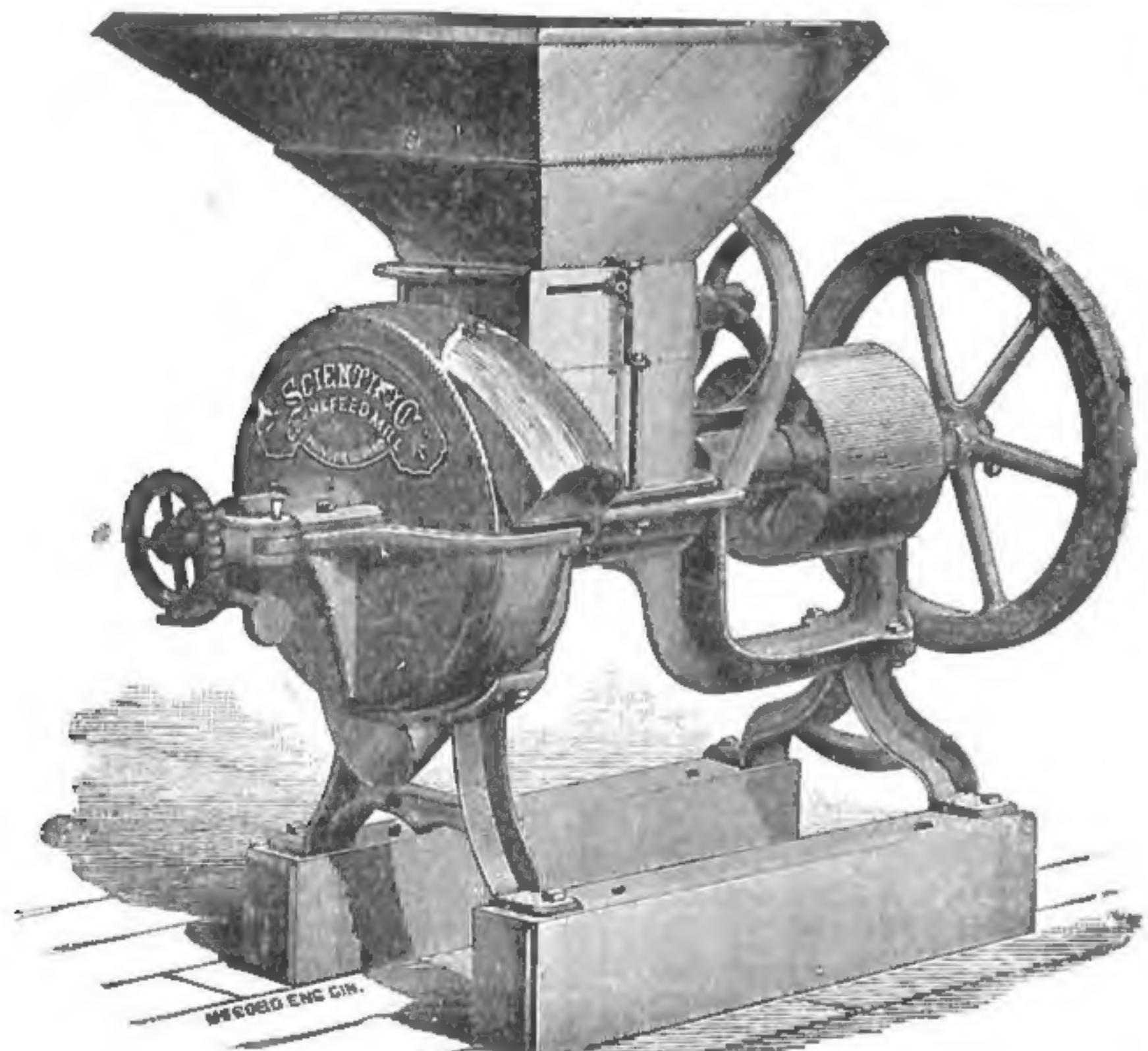
SELF-TRAMMING PORTABLE MILL

BEST GRINDING MILL MADE.

BOLTING CLOTH AND BURR AND ESOPUS MILLSTONES

WRITE FOR DISCOUNTS.

SAMUEL CAREY,
17 Broadway, NEW YORK.



THE SCIENTIFIC GRINDING MILL.

POSITIVELY THE BEST MILL ON EARTH.

GRINDS PERFECTLY, EAR CORN, SHELLED CORN,
AND ALL GRAINS.

GRINDING PLATES A SPECIAL METAL

*Hard as Steel, Guaranteed to Grind from Five to Eight
Thousand Bushels before wearing out.*

SEND FOR ILLUSTRATED CATALOGUE, PRICES, ETC.

THE FOOS MFG. CO.
SPRINGFIELD OHIO.

STILL ON TOP.

Perhaps the HIGHEST COMPLIMENT that could be paid the "Salem" bucket is the fact that during the past few years ITS SHAPE HAS BEEN SO CLOSELY IMITATED by other manufacturers as to infringe our patented rights, but experience reveals the IMPERFECTIONS OF IMITATIONS, and we therefore take it as a FURTHER COMPLIMENT to the "SALEM" bucket that some of its old patrons who were *Induced to Try the Imitations have now Returned to the Salem Bucket, thereby Acknowledging it to be the Most Satisfactory.* Don't be deceived by other makes of buckets that are claimed to be "Just as Good." Insist upon having the ORIGINAL AND RELIABLE SALEM BUCKET. All legitimate Salem buckets are plainly marked with the word

SALEM

W. J. CLARK & CO., SOLE Manufacturers SALEM, OHIO.
THORNBURGH & GLESSNER, General Agents, CHICAGO, ILL.

